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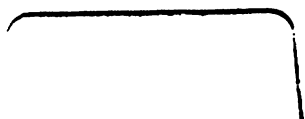
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NO. XIII.—CHRISTMAS, 1889.

(PART II. OF VOL. IV.)

THE  
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THE  
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EDITED BY THE  
REV. J. SIBREE, F.R.G.S.,  
AND THE  
REV. R. BARON, F.L.S., F.G.S.,  
*Missionaries of the L.M.S.*



VOLUME IV.  
1889-1892.



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1892.

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THE  
ANTANANARIVO ANNUAL  
AND  
MADAGASCAR MAGAZINE.

*A RECORD OF INFORMATION ON THE TOPOGRAPHY AND NATURAL PRODUCTIONS  
OF MADAGASCAR, AND THE CUSTOMS, TRADITIONS, LANGUAGE,  
AND RELIGIOUS BELIEFS OF ITS PEOPLE.*



EDITED BY THE  
REV. J. SIBREE, F.R.G.S.,  
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No. XIII.—Christmas, 1889.  
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THE  
ANTANANARIVO ANNUAL  
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MADAGASCAR MAGAZINE.

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A MALAGASY HERO,

*WHO OFFERED HIMSELF FOR HIS KING AND COUNTRY.*

ON the summit of the long and lofty rocky ridge on which Antanànarivo is built there stands, in bold relief against the prevailing blue sky, a group of royal palaces, whose high-pitched roofs and towers are conspicuous for many a mile all over Imèrina. To the south of the loftiest of these buildings, the great triple-verandahed and four-towered palace of Manjàkamiàdana, is an ancient royal house, once a wonder in its day, but now dwarfed and overshadowed by its loftier and more modern neighbours, the palace called Bèsàkana, or 'Very wide.' This is built in the old Malagasy style, of massive timber framework, walls of thick planking, and roof of enormously high pitch, with long 'horns' or crossed poles projecting high above the ridge. This ancient palace was erected in the reign of King Andriamàsinavàlona, a famous Hova sovereign, who, about 200 years ago, united under his rule the whole of the province of Imerina. In connection with the building of this palace Besakana a remarkable story has been handed down, a story which we here translate from the native original, and which has thrilled the hearts of numbers of Malagasy, who have justly felt proud of their relationship to a man whose noble spirit of self-abnegation led him to offer his life as a sacrifice for his king and his country.

There is no reason for doubting the substantial accuracy of the native account, fully confirmed as it is by the existence and

the peculiar name of the descendants of the old hero, and by the privileges which they still enjoy in consequence of what their ancestor did "in the brave days of old."

Before King Andriamasinavalona began to build his new palace, he sent for the diviners and astrologers; and these men appointed what they said would be a lucky day on which the king should erect the first corner-post of the new building. "And," said the diviners and astrologers, "in order, also, that thy kingdom be made prosperous, it will be necessary for thee to make a human sacrifice. And the first corner-post which the king erects must be sprinkled with human blood."\* Forthwith the king sent out a proclamation saying, "Gather together, gather together, all ye 'beneath-the-skies'!" So the people assembled in thousands at the place where they were accustomed to hear proclamations relating to the business of the kingdom. And when the people were thus assembled, the king stood up and said, "The diviners and astrologers tell me that in order that the palace be successfully built, in order also that my kingdom be prosperous, it is necessary for me to make a human sacrifice. So this is what I have to say to you, O my people: God hath given me this land; let those come to me who so love me that they are willing and ready to give up their native land, and wife and children, and father and mother, and even life for my sake; for I must make a human sacrifice."

No sooner had the assembled hosts heard that than they all fled; to the north, south, east, and west, they ran as fast as their legs would carry them; and the king, wondering, bewildered and astonished, was left alone by himself.

To the west of the Capital is the extensive and fertile Bètimitàtatra rice-plain, and upon a picturesque little islet rising from the plain, about two miles distant, is built a village called Anósizáto ('Hundred-isles'). On the day of the proclamation there was a man named Ratrímofòloàlina, an inhabitant of this village, who, instead of attending the great public assembly, was working in his rice-field near Anosizato. When he saw the people running away he asked what it all meant. At first no

\* It is well known to students of ethnology that there are very numerous superstitions among different nations, in ancient as well as in modern times, with regard to the commencing of a new house. In former times, when Hova houses of any pretensions were commenced—and these were always of timber framing, with three tall posts to support the ridge-tree—it was customary to sacrifice a cock and bury it in the hole in which the first corner-post of the house was to be erected. This massive post, at the north-eastern corner, that sacred to the ancestors and to the idols, was also fastened with bands of *fandrotràrana* (*Cynodon dactylon*, Pers.), a creeping grass, very tough and strong. With this also was placed some *sôdîfâfana* (*Bryophyllum proliferum*, Salis.), a herb which is very tenacious of life, and some stalks of *zozoro* or papyrus, as well as other things, all supposed to be very enduring, and so emblematical and prophetic of the house lasting for a long time and bringing prosperity to its inmates. With regard to human sacrifices when commencing to build a house, cf. Josh. vi. 26 and 1 Kings xvi. 34; and *Folk-lore of the Northern Counties*, pp. 256, 274. —ED.

one would give him full information, and the only reply he could extract from the panting and breathless runaways was, "The king wants to make a human sacrifice!" At last however he succeeded in getting a man to tell him the cause more fully.

Ratrimofoloalina said nothing and returned to his rice-field, not however to work, for he went to a little pool, where he washed his mud-bespattered legs; his spade he also cleansed, and then took it home, placing it in a corner of his little reed hut. Without saying anything to his wife and family, he straightway went to the palace-yard, and as he entered by the old stone gate which is on the north side, he saw the king pacing up and down the courtyard, with head bent down and evidently in deep meditation. Up went Ratrimofoloalina, with that form of salutation which is due to a ruler in Madagascar, "Long may you live, O king! May you reach old age! May you never be invalid! May you be happy! What was the drift of your proclamation to-day, for I was not in time to hear it?"

Then answered the king, "No one so loves me that he will consent to be a sacrifice in order to make me prosperous. When I asked for a sacrifice the people all fled from me. What then is your opinion, Ratrimofoloalina?"

When Ratrimofoloalina heard this, he stripped himself of his *lamba*, threw it aside and advanced towards the king. "Let me be a sacrifice for thee, O king," said he; "I will give my life for my king, in order that his palace be successfully built and his kingdom made prosperous."

"Are you willing that your body should be cut?" asked the king. "Yes, I am willing," said Ratrimofoloalina.

"Are you really willing to be killed?" enquired the king. "Yes, I am willing," said the man, "willing to be sacrificed for thy good, O king."

"Well," replied the king, you had better go home and ask your wife and children about this matter; and if you are in the same mind to-morrow morning, come here, and you shall be sacrificed."

Ratrimofoloalina went home, but he said nothing to his wife and children, and on the morrow he returned to the palace. The king was again pacing up and down the courtyard. Ratrimofoloalina, after saluting the king, said, "I am of same mind this morning that I was yesterday; and in order that thy palace may be successfully raised, in order also that thy kingdom may be made prosperous, I have come to be sacrificed."

The king turned aside to some officers and said, "Here! bring that piece of wood; bring also the ropes yonder;" and pointing to the wood and the ropes, he said, "Strap him down!"

The victim was soon surrounded with men who carried formidable looking spears and knives; and as he was being tied down the king eyed him intently so as to see whether he would wince or relent, but the man bravely bore it all. While he was being strapped down, crowds of people were peering through the wooden fence of the palace-yard, and they shouted out, "You are a fool, Ratrimofoloalina, to give your life to no purpose! You are a fool to forsake your wife and children! You are a wretch, and woe be to you!"

All these warnings failed to move the heroic patriot; and the king, when he saw that the man was sincere, called some of the officers aside and said, "Don't kill him! don't kill him! Bring a pot of *odi-nàto*\* and pour that over him." To another the king said, "Cut off a bit of one ear only; cut off a bit of one ear only!" Up came an officer with an ugly looking knife, and simultaneously with the cutting off of a piece of his ear, the blood-red dye was thrown over him; and a pretty spectacle Ratrimofoloalina presented. The people who at a distance were looking on thought that Ratrimofoloalina had been beheaded; and these swiftly fled lest they too should be asked to sacrifice themselves for the king.

Though Ratrimofoloalina was so sadly wounded he did not murmur; and the king, looking at the brave and noble man, cried out, "Cut the ropes! cut the ropes! stand him up!" And as he was raised up, the blood and the blood-red dye streamed down his stalwart frame.

The king forthwith gave him a *lamba* or robe made of banana-fibre, a token of special royal favour in those days. Then he said to Ratrimofoloalina, "Because out of love to me you gave your life for me, what shall I do for you? Shall I give you milch cows? and when any run dry, I will substitute them. Shall I give you a fighting bull?† and every time his horns are broken in fight I will give you another. Shall I give you rice-grounds? and every time the floods cover them with sand I will give you more. Shall I make all my subjects pay you two shillings for every house they possess? Or shall I make you to be one of my own royal ruling family? Choose what you like, and whatsoever your request be it shall be granted to you."

Ratrimofoloalina was glad when he heard that and said, "I thank you for your kindness, but let me go home first and ask the opinion of my wife and children."

The king answered, "Go home and ask the opinion of your

\* A red dye, with which the natives dye their *lambas*.

† Bull-fighting was much practised in those days and was a very favourite amusement, but it is now illegal. When a new gateway was being erected a few years ago at the south-west corner of the palace-yard, the remains of a famous bull, wrapped in red silk *lambas*, were discovered by Mr. Pool, the architect.—ED.

wife and children; and come again to-morrow morning, and whatsoever request you make it shall be granted to you."

That night Ratrimofoloalina and his wife and children pondered well the request which should be made; and on the morrow he returned to the palace. After saluting the king he said, "Concerning the milch cows and the fighting bulls, they are things which will come to an end very soon; and I do not wish that your subjects should be made to pay taxes to me; neither do I like to be burdened with the honour of becoming one of your relatives, because I prefer that you should be the sole sovereign of this country." And then, placing his hand upon his breast, he said, "Remember my offspring! remember my descendants! If it please your majesty, let none of my descendants ever suffer death for any offence."

On hearing that request the king said, "I perceive you are a far-seeing man; but I will grant you your request, for whose is the land but mine? whose is the power to make laws and govern but mine? And this is what I will do: (1) The blood of yourself and your descendants shall never more be shed, for this one sacrifice is enough. (2) You and your descendants shall never be bound with iron chains, for this one binding is enough. (3) Neither you nor your offspring shall be counted guilty of wrong. And this league with you shall all my posterity keep with your posterity, and this covenant between us shall not be broken for ever and ever."

Accordingly the king made a proclamation to this effect at Andohàlo, where a stone was set up to commemorate the event. And in the proclamation the king said, "Ratrimofoloalina, from this day forth your name shall be changed, and you shall be called Tsimàtimanóta ('not killed, though transgressing'), and of that tribe you shall be the head."

This proclamation caused some to fear lest Ratrimofoloalina should take advantage of the privileges thus conferred upon him, and others were jealous; so Andriamampàndry (a very trusted counsellor at that time) said to the king, "I could not sleep last night."

"Why?" enquired the king. "Ratrimofoloalina is the king now," replied Andriamampàndry, "and he can do as he likes with our wives, our slaves, and our oxen, for he is never to be held guilty for any wrong he may commit."

"I see," said the king, "that he has obtained an advantage over me; but for all that I cannot alter my covenant with him."

The king sent for Ratrimofoloalina and said, "I am a king, therefore I alter not my word; but with regard to my subjects' property, do not take their possessions by force, for if you do that you are a king like me. But as for my own property, do



as you please, whosoever may be angry; for my word shall never be broken so long as my descendants rule in this land."

Ratrimofoloalina answered, "How may I be assured that your word will never be broken?"

The king replied, "When you or your descendants present the allegiance money, do not use either a dollar or cut money, as other people do, but present two silver links; and that for two reasons: (1) This covenant between us two is like a link; and if the two links become wide apart, hammer them together so that they may unite. That is to symbolize that our friendship must always be close. (2) If your descendants are guilty of taking the property of the sovereign, they must bring the links to whoever is sovereign, and they shall not be counted guilty."

Now it might be thought that the members of this tribe would presume upon the privileges they possess, but such is not the case; for those who belong to 'The not-killed-though-transgressing' tribe say they would be ashamed to take advantage of the position won for them by their noble ancestor; and out of this tribe have come many who have faithfully served Christ in Madagascar.

A. KINGDON.



#### X SAKALAVA CUSTOMS WITH REGARD TO DECEASED KINGS.

"FOR the kings of Mâroserânana, the funeral ceremony is remarkable; the corpse, sewn into an ox-hide, is hung from a tree in the inmost recesses of the neighbouring forest, and its guardianship is committed to one particular family. After several months, the chiefs meet together and go to seek for the relics, that is to say, one of the cervical vertebræ, a nail, and a lock of hair; the remaining portions are buried with much ceremony. On these occasions human sacrifices are sometimes offered; the bodies of the victims being placed in coffins upon which the royal catafalque rests, for a sovereign cannot lie on the earth like one of his meaner subjects. The royal relics are enclosed in a crocodile's tooth, and these are carried into the 'sacred house' (*trâno mäsina*) where his ancestors' remains are also preserved. The possession of these relics constitutes the right to the succession. A legitimate heir who should be dispossessed of them would lose all authority over his people, and the usurper who obtained them would be acknowledged undisputedly as sovereign. A relation of the deceased sometimes gains access by stealth at night into the 'house of the ancestors', and after possessing himself of the precious crocodiles' teeth is proclaimed king. But even the king is less regarded than the relics, which are guarded from view with the greatest care under pretext of rendering them the honours which are their due."—A. GRANDIDIER, in *Bull. Soc. de Géog.*, Avril, 1872.

EARLY NOTICES OF MADAGASCAR FROM THE  
OLD VOYAGERS (PART I.):EXTRACTS FROM KERR'S "VOYAGES AND  
TRAVELS."\*

WITH NOTES BY CAPTAIN S. PASFIELD OLIVER (LATE) R.A.

I.—VOYAGES AND TRAVELS BY LUDOVICO VERTHEMA IN 1503—1508.†

"H A V I N G made provision for our voyage of such things as could be procured at Mozambique, we sailed for the Cape of Good Hope, passing the island of *St. Lawrence*, otherwise called *Madagascar*, which is 80 leagues from the nearest part of the continent. I suppose that in a short time the Portuguese will be masters of this island, as they have burned and destroyed many of its towns and villages, and are much feared by the natives.

"So far as I conjecture by my peregrinations, especially those in India and Ethiopia, it is my opinion that the King of Portugal is likely to be the richest king in the world, if he continue as he has begun; and certainly his dignity and godly zeal is not unworthy of such high fortune, as by his means the knowledge of the Christian faith is greatly extended."

II.—VOYAGE TO GOA IN THE PORTUGUESE FLEET IN 1579,  
BY FATHER THOMAS STEVENS.‡

"Our day of peril was the 29th of July. You must understand that after passing the Cape of Good Hope, there are two ways to India, one within the island of *Madagascar*, or between that and Africa, called the Canal of Mozambique, which the Portuguese prefer, as they refresh themselves for a fortnight or a month at Mozambique, not without great need after being so long at sea, and thence in another month get to Goa.

"The other course is on the outside of the island of *St. Lawrence* or *Madagascar*, which they take when they set out too late, or come so late to the Cape as not to have time to stop at Mozambique, and then they go on their voyage in great heaviness, because in this way they have

\* *A General History and Collection of VOYAGES and TRAVELS, arranged in systematic order: forming a complete History of the origin and progress of Navigation, Discovery and Commerce, by Sea and Land, from the earliest ages to the present time*, 1812. By Robert Kerr, F.R.S. & F.A.S. Edin. Illustrated by Maps and Charts. Vol. VII., Part II., Book III. Chapt. IV., Sect. XIII.

† "We learn from the *Bibliothèque Universelle des Voyages*, I. 264, that this itinerary was originally published in Italian at Venice, in 1520. The version followed on the present occasion was republished in old English, in 1811, in an appendix to a reprint of HAKLUYT'S EARLY VOYAGES, TRAVELS AND DISCOVERIES; from which we learn that it was translated from *Latine into Englishe*, by *Richard Eden*, and originally published in 1576. In both these English versions the author is named *Lewes Vertomannus*, but we learn, from the *Bibliothèque Universelle des Voyages*, that his real name was Ludovico Verthema, which we have accordingly adopted on the present occasion. The itinerary is vaguely dated in the title as of the year 1503, but we learn from the text that Verthema set out upon the pilgrimage of Mecca from Damascus in 1503, and he appears to have left India on his return to Europe, by way of the Cape of Good Hope and Lisbon in the end of 1508." (Kerr.)

‡ *Padre Thomas Stevens* was a Jesuit priest belonging to the College of St. Paul at Goa, and his letter, preserved by *Hakluyt*, was written from that place in 1584.—S.P.O.

no port; and by reason of the long navigation and the want of fresh provisions and water, they fall into sundry diseases."

III.—FIRST VOYAGE OF THE ENGLISH TO INDIA, IN 1591; BEGUN BY CAPTAIN GEORGE RAYMOND, AND COMPLETED BY CAPTAIN JAMES LANCASTER.\*

"When we had passed as far as *Cape Corrientes*, on the east coast of Africa, at the entry into the channel of Mozambique, we encountered a dreadful storm, with excessive gusts of wind, during which we lost sight of our admiral and could never hear of him nor his ship more, though we used our best endeavours to seek him, by plying up and down a long while, and afterwards staid for him several days at the island of *Comoro*, which we had appointed our rendezvous in case of separation.... From thence we shaped our course† north-east, and not long afterwards fell in with the north-west point‡ of the island of *St. Lawrence* or *Madagascar*, which by God's blessing one of our men espied late in the evening by moonlight. Seeing from afar the breaking of the sea, he called to some of his comrades, asking what it meant, when they told him it was the sea breaking upon shoals or rocks, upon which we put about ship in good time, to avoid the danger we were like to have incurred. Continuing our voyage, it was our lot to overshoot *Mozambique*, and to fall in with *Quitangone*, two leagues farther north."

"On the 8th December, 1592, we made sail [from *Punta Galle* in *Ceylon*] for the Cape of Good Hope, passing the Maldiv Islands, and leaving the great island of *St. Lawrence* to starboard or on our right hand; we passed its southern end in lat. 26° S. In our passage from the island of *St. Lawrence* or *Madagascar*, to the mainland of Africa, we found immense quantities of bonitas and albigores."

IV.—ANOTHER ACCOUNT OF THE SAME VOYAGE BY JOHN MAY.

"The 8th September, 1591, the *Penelope* and *Edward Bonadventure* weighed anchor [*Saldhana Bay*], and that day we doubled the Cape. The 12th following we were assailed by a fierce tempest or hurricane; and in the evening we saw a great sea break over our Admiral, the *Penelope*, which struck out their light, and we never saw them any more. In October we, in the *Edward*, fell in with the westernmost part of the

\* The full title of this voyage in Hakluyt's collection is thus: "A Voyage with three tall ships, the *Penelope*, Admiral, the *Merchant Royal*, Vice-admiral, and the *Edward Bonadventure*, Rear-admiral, to the East Indies, by way of the Cape of Buena Speranza to Quitangone, near Mozambique, to the isles of Comoro and Zanzibar, on the backside of Africa, and beyond Cape Comorin in India, to the isles of Nicobar, and of Gomes Palo, within two leagues of Sumatra, to the islands of Pulo Pinaom, and thence to the mainland of Malacca; begun by Mr. George Raymond in the year 1591, and performed by Mr. James Lancaster, and written from the mouth of Edmund Barker of Ipswich, his Lieutenant in the said Voyage, by Mr. Richard Hakluyt."

As for Captain Raymond, his ship was separated near Cape Corrientes, on the eastern coast of Africa, from the other two, and was never heard of more during the voyage (*vide Astley's Collection of Voyages*). This seems to have been a regular privateering or, more properly, piratical voyage.—S.P.O.

† "The place of shaping this course is by no means obvious. It could not be from Comoro, which is farther north than the north end of Madagascar, and was therefore probably from Cape Corrientes." (*Kerr*.)

‡ "From the sequel, the text is certainly not accurate in this place, as they were not so far as this cape by 100 leagues. It probably was Cape St. Andrew." (*Kerr*.)

island of St Lawrence about midnight, not knowing where we were. Next day we came to anchor at *Quilangone*, a place on the mainland of Africa."

V. - VOYAGE OF CAPTAIN JOHN DAVIS, AS PILOT TO A DUTCH SHIP, TO THE EAST INDIES, IN 1598.\*

"The 6th January, 1599, we doubled Cape Aguillas, the most southern point of Africa, in lat.  $35^{\circ}$  S., where the compass has no variation. The 6th February we fell in with Madagascar, short of St. Romano, and not being able to double it, we bare room with the bay of St. Augustine, on the south-west side of that island, in lat.  $23^{\circ}50'$  S.

"The 3rd March we anchored in that bay, where we saw many people on the shore, but they all fled when we landed; for when our *baas* was in this bay on the former voyage, he greatly abused the people, and having taken one of them, he had him tied to a post and shot to death, having besides used them otherwise most shamefully. After seven days, we enticed some of them to come to us, from whom we bought some milk and one cow; but they soon left us and would not have any more connexion with us. They are a strong well-shaped people, of a coal-black colour, having a sweet and pleasing language.

"Their weapons are spears or half-pikes, headed with iron, which they keep very clean, and they go quite naked. The soil appeared very fertile, and we saw a vast number of tamarind trees. We found another high tree producing beans very good to eat, in pods two feet long, and the beans of a proportional size. We saw here many chameleons. We English suffered no small misery, especially in this bay; but God, the ever living Commander, was our only succour.

"The 8th March, we came on board hungry and meatless, and on the 14th we set sail from this place, which we called *Hungry Bay*, shaping our course to the northward along the west side of the island.

"The 29th we came to the islands of *Comoro*, between  $12^{\circ}$  and  $13^{\circ}$  S. There are five of these islands, named *Mayotta*, *Anzuame*, *Magliaglie*, *San Christophero* and *Spiritu Santo*.† The 30th we anchored at *Mayotta*. . . . The king gave us a letter of recommendation for the Queen of *Anzuame* or *Hinzuan*, as that island has no king.

"We sailed from *Mayotta* on the 17th April and anchored at *Hinzuan* on the 19th, before a town named *Demos*, which appears, from its ruins, to have been a strong place, the houses being built of hewed freestone, and what remains being as large as Plymouth, but the walls are almost

\* "A Brief Relation of Master John Davis, Chief Pilot to the Zealanders in their East India Voyage, departing from Middleburgh." (*Astley's Voyages*; i. 254; *Purchas his Pilgrimages*; i. 116.)

† "There are six islands in the Comoro Group: 1. *Comoro*, *Gasidza* or *Angazesio*; 2. *Malalo*, *Senbraeas* or *Moelia*; 3. *Mayotta*; 4. *St. Christopher's*; 5. *Hinzuan*, *Anzuan* or *Joanna*; 6. *St. Esprit*; which last has four inlets off its western side, and one to the N.E. of its northern end." (*Kerr*.)

This note of Mr. Robert Kerr, in 1812, shows what ignorance yet prevailed in high quarters, for this gentleman was an F.R.S. and an expert (?) geographer. Yet to show his carelessness in editing these voyages, his map, or rather the one made for him, engraved by Moffat for Blackwood the publisher, of Edinburgh, shows the proper number of the Comoro Is., which is only four! viz. 1. *Comoro* or *Angasi*; 2. *Moelia* (*Mohilla*); 3. *Mayotta* or *St. Christopher*; 4. *Johanna* or *Anjuan*. By De Lisle's map of 1722 two extra islands are inserted, south of *Mayotta* and *Mohilla*. In Lislet-Geoffroy's chart of 1819, the small islet of St. Christopher is marked on the Pracel Bank and is now known as Coffin Island.—S.P.O.

ruined....The 28th we departed from *Hinzuan*, passing through the islands of *Mascarenhas* and the shoals of *Almirante*."

VI.—FIRST VOYAGE OF THE ENGLISH EAST INDIA COMPANY, IN 1601,  
UNDER THE COMMAND OF CAPTAIN JAMES LANCASTER.

"On the 26th November we fell in with the headland of the island of St. Lawrence or Madagascar, somewhat to the eastward of Cape St. Sebastian, and at five miles from the shore we had 20 fathoms; the variation of the compass being  $16^{\circ}$ , a little more or less. In an east and west course the variation of the compass serves materially and especially in this voyage. From the 26th November till the 15th December we plied to the eastwards, as nearly as we could, always striving to get to the island of Cisne,\* called Diego Rodriguez in some charts; but ever from our leaving Madagascar, we found the wind at E. or E.S.E. or E.N.E., so that we could not accomplish it, and we could not continue to strive long in hopes of the wind changing, as our men began to fall sick of the scurvy. The captain of our Vice-admiral, John Middleton of the *Hector*, now proposed to our general to bear away for the bay of *Antongil*, on the east coast of Madagascar, where we might refresh our men with oranges and lemons, so as to get rid again of this cruel disease; which counsel was approved by him and the whole company.

"We had sight of the southernmost part of the island of St. Mary, and anchored next day between that island and the main of Madagascar. We immediately sent our boats to St. Mary, where we procured some store of lemons and oranges, being very precious for our sick men to purge them of the scurvy. While riding here, a great storm arose, which drove three of our ships from their anchors; but within sixteen hours the storm ceased, and our ships returned and recovered their anchors. The general thought it improper to remain here any longer, on account of the uncertainty of the weather, the danger of riding here, and because we were able to procure so little refreshment at this island; having got, besides a few lemons and oranges, a very little goats' milk and a small quantity of rice. But as our men were sick, and the easterly winds still prevailed, he gave orders to sail for *Antongil*. The isle of St. Mary is high land and full of wood. The natives are tall handsome men, of black colour and frizzled hair, which they stroke up at their foreheads as our women do in England, so that it stands three inches upright. They go entirely naked, except covering their loins; and are very tractable and of familiar manners, yet seemed valiant. Most of their food is rice with some fish; yet while we were there, we could get very little rice to purchase, as their store was far spent, and their harvest near at hand. There are two or three watering-places in the north part of this island, none of them very commodious, yet there is water enough to be had with some trouble.

"Departing from this island of St. Mary on the 23th December, we came into the bay of *Antongil* on Christmas-day and anchored in eight fathoms water, at the bottom of the bay, between a small island and the main. The best riding is nearest under the lee of that small island, which serves as a defence from the wind blowing into the bay; for while

\* *Isola del Cisne*, otherwise Rodriguez.—S.P.O.

we were there it blew a very heavy storm, and those ships which were nearest the island fared best. Two of our ships drove with three anchors a-head, the ground being oozy and not firm. Going a-land on the small island we perceived by a writing on the rocks, that five Holland ships had been there, and had departed about two months before our arrival, having had sickness among them; for, as we could perceive, they had lost between 150 and 200 men at this place.

"The day after we anchored, we landed on the main, where the people presently came to us, making signs that five Dutch ships had been there and had bought most of their provisions. Yet they entered into trade with us for rice, hens, oranges, lemons, and another kind of fruit called plantains, but held everything very high, and brought only small quantities. Our market was beside a considerable river, into which we went in our boats, such of our men as were appointed to make the purchases going ashore, the rest always remaining in the boats with their arms in readiness, and the boats about twenty or thirty yards from the land, where the natives could not wade to them, and were ready at all times, if needful, to take our marketers from the land. In this manner we trifled off some days before we could get the natives to commence a real trade; for all these people of the south and east parts of the world are subtle and crafty in bartering, buying and selling, so that without sticking close to them, it is difficult to bring them to trade in any reasonable sort, as they will shift continually to get a little more, and then no one will sell below that price.

"Upon this, the general ordered measures to be made of about a quart, and appointed how many glass beads were to be given for its fill of rice, and how many oranges, lemons and plantains were to be given for every bead, with positive orders not to deal at all with any who would not submit to that rule. After a little holding off, the natives consented to this rule, and our dealing became frank and brisk; so that during our stay we purchased  $15\frac{1}{2}$  tons of rice, 40 or 50 baskets of their peas and beans, great store of oranges, lemons and plantains, eight beves and great number of hens. While at anchor in this bay, we set up a pinnace which we had brought in pieces from England; and cutting down trees, which were large and in plenty, we sawed them into boards, with which we sheathed her. While we remained here there died, out of the Admiral, the master's mate, the chaplain and surgeon, with about ten of the common men; and out of the Vice-admiral, the master and some two more. . . . Those who died here were mostly carried off by the flux, owing, as I think, to the water which we drank; for it was now in the season of winter, when it rained very much, coming great floods all over the country, so that the waters were unwholesome, as they mostly are in these hot countries in the rainy season. . . . We sailed from this bay March 6, 1602."

VII.—THIRD VOYAGE OF THE ENGLISH EAST INDIA COMPANY, IN 1607,  
BY CAPTAIN WILLIAM KEELING.

"The 17th February, 1608, we saw land bearing E., about eight leagues from us, and as I judged in lat  $24^{\circ} 20'$  S. About noon we were athwart two small islands, which seemed to make a good road; but not being sure of our latitude we stood off and on till high noon, when we

might take an observation, having no ground with 60 fathoms line within two miles of the shore. The 18th, in lat.  $23^{\circ} 37'$ , we anchored in  $7\frac{1}{2}$  fathoms, sandy ground, the two islands bearing S. W., one mile distant. There was an island E. by N. from us, about three leagues off, which the master supposed to be St. Augustine, for which we proposed to search. The variation here was  $15^{\circ} 30'$ . . . . The 19th we weighed in the morning. . . . We now steered for the seeming harbour or bay of St. Augustine, having from our former anchorage in sailing towards it, from ten to twelve and twenty fathoms, and on coming near the point of the bay, we had no ground with 100 fathoms, till we came far into the bay, our skiffs going before, and then had ground at thirty, shoaling to eight fathoms.

"We anchored in eighteen fathoms and laid out another anchor in forty fathoms, the deepest water being on the south shore, the other being made shallow by the coming down of rivers. The land bore W. by S. and N. from our anchorage, and to the north are certain shoals on which the sea breaks, so that it was only open to five points of the wind; but the road is very full of pits and deep water, and a strong stream runs always from the river.

"Captain Hawkins came on board me, and as I was very unwell, I sent him ashore with the boats of both ships. He returned on board towards night without having seen any people, though their tracks were quite recent in several places. He left some beads and other trifles in a canoe to allure the natives. In his opinion we had small chance here of any refreshments, but my fishers from the other side of the bay told me of having seen great store of beasts' bones, and bones certainly have ~~once~~ had flesh. George Evans, one of the *Hector's* men, was severely bitten by an *alegarta*. I gave orders to fill our water-casks with all speed, and propose in the mean time to seek for refreshment. The tide flows here *nearest east*,\* and rises high.

"The 21st we saw four natives, to whom I sent some beads and other baubles, making them understand by signs that we were in want of cattle, when they promised in the same manner to bring plenty next day. Seeing people on shore next day, I went a-land, and found them a subtle (*supple*?) people, strongly-built and well-made, almost entirely naked, except a cloth of bark carelessly hung before them. We bought a calf, a sheep and a lamb, but they would only deal for silver.

"In the afternoon I rowed up the river, which I found shallow and brackish. The 24th we bought three kine, two steers and four calves, which cost us about nineteen shillings and a few beads. These cattle have far better flesh than those we got at Saldanha, and have bunches of flesh on their shoulders, like camels, only more forward. Some affirmed that the people were circumcised. We here found *the beautiful beast*.†

\* "This expression probably means that it is high water when the moon is nearly east." (Kerr.)

† "This seems," writes Astley, "to refer to some creature then in the ship, and perhaps brought home with them to England (*Astley, I, 316, a*). Mr. Finch (see p. 14) says "there were in the woods, near the river, great store of beasts, as big as monkeys, of an ash colour, having a small head, a long tail like a fox, barred with black and white, and having very fine fur." (Kerr.)

This expression "the beautiful beast" is interesting as being the first recognition of the lemur

"Where we rode at anchor the water by the ship's side was very fresh at high water, and very salt at low water, contrary to what might have been expected; and at high water it was very fresh on one side of the ship, and very salt on the other. In a gust of wind at N. W., on the 25th, our ship drifted and broke a cable, by which we lost the anchor. We bought this day a calf, a sheep and a lamb, the sheep having a great tail; all three costing us 2s. 3d. I found certain spiders, whose webs were as strong as silk. All along the low land from E. to W., about half a mile from the shore, there runs a ledge of rocks, on which the sea continually breaks, between which and the shore are two fathoms water, wonderfully full of fish, and having a fine beach on which to haul nets.

"The 28th in the morning we got under sail to put to sea. This bay of St. Augustine is a very unfit place for ships to touch at for refreshments, as these are to be had only in small quantities."

VIII.—OBSERVATIONS OF WILLIAM FINCH, MERCHANT, WHO ACCOMPANIED CAPTAIN HAWKINS TO SURAT, AND RETURNED OVERLAND TO EUROPE, 1608.

OBSERVATIONS MADE AT ST. AUGUSTINE IN MADAGASCAR.

"St. Augustine,\* in the great island of St. Lawrence or Madagascar, is rather a bay than a cape or point, as it has no land much bearing out beyond the rest of the coast. It is in 23° 30' S. latitude, the variation here being 15° 40', and may be easily found, as it has *breaches* on either side some leagues off to the W.S.W.

"Right from the bay to seaward the water is very deep; but within the bay the ground is so very shelvy, that you may have to anchor to the north in 22 fathoms, and your other anchor in more than 60; while in some places nearer shore you will not have two feet at low water, and deep water still further in; the whole ground a soft ooze.

"Within a mile or two of the bay, the land is high, barren and full of rocks and stones, with many small woods. Two rivers run into the bottom of the bay, the land about them being low, sandy and overflowed; and these rivers pour in so much water into the bay that their currents are never stemmed by the tide, which yet rises two fathoms, by which the water in the bay is very thick and muddy. Great quantities of canes are brought down by these rivers, insomuch that we have seen

\* "*St. Augustine's Bay*: 150 miles northward," write Findlay, "of Point Barrow. On this low land, on the south, there is a village called Salar. The Ong-lahe or Dartmouth river (*Oniläky*, Grandidier) falls into the head of the bay. The north point of this river is a steep bluff, Barn hill, and the south one, which is also high, has a low woody point terminating to the northward. The common anchorage is in 8 or 12 fathoms. It is high water about 4h. 30m, the rise being about 13½ feet."—*S.P.O.*

"*Nos Vek*, or Sandy island, is in lat. 28° 38', long. 43° 38'; is small, low and sandy, and lies nearly two miles off shore."—*S.P.O.*

as not being a monkey. The ring-tailed lemur is the most beautiful of the Lemurine tribe, "It is," says Shaw (quoted by Ellis, *Three Visits*, p. 437), "scarcely as large as a cat, and more slender in form. Its colour is a pale greyish brown; the nose black, the eyes bright and surrounded by a distinct circle of black; the hands and feet are black underneath, the fingers and toes being furnished with round nails. The tail is long and beautifully marked throughout the whole length with distinct circles of black and white, the fur fine and soft and sub-erect in its growth. In their native state these animals live in society in the woods and feed principally on fruits. When domesticated they are gentle, affectionate, and lively, delighting much in sunshine and warmth, and their motions have an ease and elegance almost surpassing every other quadruped."—*S.P.O.*



abundance of them twenty or thirty leagues out at sea. This bay is open to a north-west wind, yet the force of the sea is broken by means of a ledge of rocks. We caught here smelts of a foot long, and shrimps, ten inches. The best fishing is near the sandy shore off the low land, where the natives catch many with strong nets. Within the woods we found infinite numbers of water-melons growing on the low lands, which yielded us good refreshment. But we had nothing from the rivers, except that one of our men was hurt by an alligator. The water also was none of the best, but we got wood in plenty.

"This place did not seem populous, as we never saw above twenty natives at any one time. The men were comely, stout, tall and well-made, of a tawny colour, wearing no clothing, excepting a girdle or short apron made of rind of trees. Their beards were black and reasonably long; and the hair of their heads likewise black and long, plaited and frizzled very curiously; neither had their bodies any bad smell. They carry many trinkets fastened to their girdles, adorned with alligator's teeth, some of them being hollow, in which they carry tallow to keep their darts bright, which are their chief weapons, and of which each man carries a small bundle, together with a fair lance, artificially headed with iron, and kept as bright as silver.

"Their darts are of a very formidable and dangerous shape, barbed on both sides; and each man carries a dagger like a butcher's knife, very well made. They therefore showed no regard for iron, and would not barter their commodities for anything but silver, in which we paid twelpence for a sheep, 3s. 6d. for a cow. They asked beads into the bargain, for which alone they would give nothing except a little milk, which they brought down very sweet and good in gourds. Their cattle have great bunches on their fore-shoulders, in size and shape like sugar-loaves, which are of a gristly substance and excellent eating. Their beef is not loose and flabby, like that at Saldhana, but firm and good, little differing from that of England. Their mutton also is excellent, their sheep having tails weighing 28 pounds each, which therefore are mostly cut off from the ewes.

"In the woods near the river there are great numbers of monkeys of an ash-colour,\* with a small head, having a long tail like a fox, ringed or barred with black and white, the fur being very fine. We shot some of these, not being able to take any of them alive. There are bats† also, as large almost in the bodies as rabbits, headed like a fox, having a close fur, and in other respects resembling bats, having a loud shrill cry. We killed one whose wings extended a full yard.

"There are plenty of herons, white, black, blue and divers mixed colours; with many *bastard* hawks, and other birds of an infinite variety of kinds and colours, most having crests on their heads like peacocks.

"There are great store of lizards and chameleons also, which agree in the description given by Pliny, only it is not true that they live on air

\* See ante, Keeling's "beautiful beast," and note to same about thering-tailed lemurs.—S.P.O.

† *Pteropus edulis*, or 'Flying-fox bat.' These often measure over a yard from tip to tip of wings. They make a barking noise at night, when they come down to eat the mangoes and badamlers, not unlike the yelping of small dogs. They are uncommonly good eating if properly cooked.—S.P.O.

without other food; for having kept one on board for only a day, we could perceive him to catch flies in a very strange manner. On perceiving a fly sitting, he suddenly darts out something from his mouth, perhaps his tongue, very loathsome to behold, and almost like a bird-bolt, with which he catches and eats the flies with such speed, even in the twinkling of an eye, that one can hardly discern the action. In the hills there are many spiders on the trees, which spin webs from tree to tree of very strong and excellent silk of a yellow colour, as if dyed by art. I found also hanging on the tree, great worms, like our grubs, with many legs, inclosed within a double cod of white silk.

"There grows here great store of the herb producing aloes, and also tamarind trees by the waterside. Here also is great abundance of a strange plant which I deem a wild species of cocoa-nut, seldom growing to the height of a tree, but of a shrubby nature, with many long prickly stalks some two yards long. At the end of each foot-stalk is a leaf about the size of a great cabbage leaf, snipt half round like a sword-grass. From the tops of this plant, among the leaves, there spring out many branches, as thick set with fruit as they can stand, sometimes forty of them, clustering together on one branch. These are about the size of a great Katherine pear; at the first greenish and shaped almost like a sheep's bell, with a smooth rind flat at top, within which rind is a hard substance almost like a cocoa-nut shell, and within that is a white round hollow kernel of a gristly consistence, yet eatable, and in the central hollow about a spoonful of cool sweet liquor, like cocoa-nut milk.

"There is another tree, as big as a pear tree, thick set with boughs and leaves resembling those of the bay, bearing a large globular fruit like a great football, hanging by a strong stalk. The rind is divided by seams into four quarters, and being cut green yields a clammy substance like turpentine. The rind is very thick, consisting of divers layers of a brown substance like agaric, but harder, and contains thirteen cells, in each of which is contained a large kernel of a dirty white colour, hard, bitter and ill-tasted."

IX.—FOURTH VOYAGE OF THE ENGLISH EAST INDIA COMPANY IN 1608. OF THE VOYAGE OF THE 'UNION,' VICE-ADMIRAL, UNDER THE COMMAND OF CAPTAIN RICHARD ROWLES, LIEUTENANT-GENERAL.

"The *Union* (having lost company with the *Ascension* during a storm off the Cape) shaped its course for St. Augustine's Bay in Madagascar. Being arrived there, they went ashore, and remained twenty days, where they procured good refreshing, being always in hopes of the coming of the *Ascension* and pinnace, but were disappointed. Then making sail from thence, they directed their course for the island of Zanzibar, in hopes to meet the general there."

"The *Union* put now to sea about the month of February, 1609, having the wind at N.E. and north, which was directly contrary for their intended voyage to Socotora. After having been long at sea and made little or nothing of their way, the men being very much troubled with the scurvy, the captain thought proper to bear up for the north part of the island of Madagascar, meaning to go into the bay of Antongil; but they came upon the western side of the island, where they proposed to endeavour the recovery of their almost lost men, and to spend the adverse monsoon.

On this side of the island they came into an exceedingly extensive bay, which they afterwards understood was called by the natives *Canquomorra*,\* the country round being very fertile and beautiful. The first view of this place gave much pleasure to all their men, and they soon had conference with the natives, who at first proffered great kindness, but afterwards treated them very ill.

"As all the merchants had been sundry times on shore visiting the king, who treated them kindly, and came aboard again as safe as if they had been in England, the captain, attended by Mr. Richard Reve, chief merchant, Jeffrey Castel, and three others, adventured to go ashore to the king. Samuel Bradshaw had been often before employed about business with the king; but it pleased God at this time that the captain had other business for him, and so made him remain on board, which was a happy turn for him. For no sooner was the captain and his attendants on shore, than they were betrayed and made prisoners by the natives; but by the kind providence of the Almighty, the boats escaped and came presently off to the ship, informing us of all that had happened.

"No sooner was this doleful news communicated, than we saw such prodigious numbers of praus and large boats coming out of the river, as were quite wonderful. The master gave immediate orders to the gunner to get the ordnance in readiness, which was done with all speed. The vast fleet of the infidels came rowing up to our ship, as if they would have immediately boarded her; but by the diligence and skill of the gunner and his mates, sinking some half-dozen of the boats, they were soon forced to retire like sheep chased by the wolf, faster than they had come on. But before our ordnance made such slaughter among them, they came up with so bold and determined a countenance, and were in such numbers, that we verily thought they would have carried us, for the fight continued at the least two hours, before the effect of our ordnance made them retire, and then he was the happiest fellow that could get fastest off; and we continued to send our shot after them as far as our guns could reach.

"We remained after this in the bay for fourteen days, in hopes of recovering our lost captain and men, in which time we lost seven men more by a sudden disease, which daunted us more than the malice of the infidels; those who died were among those who fought most lustily with the cannon against the savages, yet in two days were they all thrown overboard. These crosses coming upon us, and having no hopes to recover our captain and the others, we thought it folly to remain any longer at this place, and therefore we made haste away. Not being

\* In the margin Purchas gives *Boamora* as a synonymous name of this bay. *Vohemaro*, or *Boamora*, is a province or district at the northern end of Madagascar, in which there are several large bays, none having any name resembling that in the text. The bay of *Vohimaro* is on the east side of the island in lat.  $13^{\circ} 30'$  S. (Kerr.) Mr. Kerr is needlessly perplexed. In Thornton's chart just south of old Mathelage is *Bannora*. M. Grandidier identifies *Vieux Masselage* with the modern Mâhajamba Bay. In several of the older maps, from Berteli (1567) we find '*Vingangara*,' Mercator (1569), '*linganjara*,' Ortelius (1570), '*Viyang*,' Hondius (1607), '*Vigangara*,' equivalent to the '*Rotundus Portus*' of Sanuto (1588); Cauche (1651), '*Vigangara*,' Sanson (1655), '*Rotundus Portus* als. *Vingagora*,' which appears in Danville's map (1749) as '*Managuara*,' and '*Bannora*' in Thornton; '*Bannora*' in Bellin's map (1765); but, '*Panora*' in Manneville (1770) appears with '*Managuara*' further south; in Brué as '*Narveenda*.' 'In fact, *Canquomorra*' is probably Mahajamba Bay, mixed up with neighbouring names.—S.P.O.

thoroughly supplied with water, we thought good to stop a little time at a place not far off; but before we could dispatch this business, the savages made another attempt with a great multitude of boats, some of them even large vessels, and so thick of men that it was wonderful; but they liked their former reception so ill, that they did not care for coming near a second time, and went all ashore, and placed themselves so as to have a view of the ship. Perceiving their intended purpose and fearing some mischief in the night, we weighed and stood in towards the shore where the savages sat, and gave them a broadside as a farewell, which fell thick among them, making visibly several lanes through the crowd, on which they all ran out of sight as fast as possible.

"We then stood out to sea, leaving fourteen of our men behind us, seven treacherously taken prisoners by the savages, and seven that died of sickness. We then directed our course for Socotora."

X.—SIXTH VOYAGE OF THE ENGLISH EAST INDIA COMPANY, IN 1610,  
UNDER THE COMMAND OF SIR HENRY MIDDLETON.

"The 6th September, in lat.  $23^{\circ} 30'$  S., wind southerly, a pleasant gale. This day after dinner we saw land, and before night came to anchor in the Bay of St. Augustine, where we found the *Union* distressed for want of provisions. The 7th I went ashore in my pinnace to endeavour to get fresh victuals for the people, but could not; we got, however, wood and water."

Captain Nicholas Downton, Lieut-general under Sir Henry Middleton, in the *Peppercorn*, narrates of this same voyage:—

"We descried the island of Madagascar on the 6th September, in lat.  $23^{\circ} 38'$  S., and anchored that evening in the Bay of St. Augustine, in 12 fathoms. We here found the *Union*, of London, Vice-admiral of the Fourth Voyage, her people being much distressed for provisions to carry them home. They related to our general their having unfortunately lost company of their Admiral and pinnace between Saldanha and the Cape of Good Hope, of which they had never heard since, and various other unfortunate circumstances of their outward-bound voyage.

"At this place I particularly remarked two singular kinds of trees. One of these yields from its leaves and boughs a yellow sap of so fat a nature that when fire is put to it standing quite green, the fire blazes up immediately over all the leaves and branches. Its wood is white and soft. The other kind has white wood with a small brown heart, but nearly as hard as *Lignum vitæ*. The trees, which we of the *Peppercorn* cut for firewood, hung all full of green fruit called *Tamarin* [tamarinds], as large as an English bean-cod, having a very sour taste and reckoned good against the scurvy. The men of our Admiral having more leisure than ours, gathered some of this fruit for their own use. We saw likewise here abundance of a plant hardly to be distinguished from the *Semprevivum* of Socotora, whence the Socotrine aloes is made; but I know not if the savage natives of this island have any knowledge of its use. The natives, for what reason I know not, came not near us, so that we got not here any beef or mutton, though oxen used to be had here for a dollar. But we were told the disorderly fellows of the *Union* had improvidently given whatever the savages asked, so that scarcely any are now to be had even for ten shillings each. Though savage, the people of this

island are not ignorant in ordering their men in battle array, as was experienced by the *Union* at Jungomar.\* But in all parts of the island it is necessary for the Christians to be very much on their guard, for the natives are very treacherous. We left St. Augustine's Bay on the 9th September."

REMARKS BY MR. PICKERSGILL ON SOME OF CAPT. OLIVER'S NOTES.

*Fourth Voyage of the East India Company in 1608*; notes, pp. 16 and 18.

Starting from *St. Augustine's Bay* with the intention of proceeding to Socotra, the voyagers in the *Union* were delayed by adverse winds so long that the men fell ill of scurvy. The captain then bore up, as he thought, for Antongil Bay, but made "an exceedingly extensive bay" on the west coast, "called by the natives *Canquomorra*."

Captain Oliver thinks Kerr is needlessly perplexed about this *Canquomorra* and concludes his note by saying: "In fact, *Canquomorra* is probably *Mahajamba Bay*, mixed up with neighbouring names." But this same place, where the crew of the *Union* had a fight with the natives, is referred to in the *Sixth Voyage of the East India Company (1610)*, under the name of '*Jungomar*,' and Captain Oliver, after stating that Kerr "places it in lat.  $13^{\circ} 41'$  S. and long.  $49^{\circ} 28'$  E.," remarks: "This is the '*Jangomy*' or '*Jean Gomme*' of Chevreuil in 1673," and asks whether it may not be *Mojangà*. Hardly, one might reply, if it is *Mahajamba* already.

What reason Kerr had for his lat.  $13^{\circ} 41'$  S. is not stated, but he nearly hits by that parallel upon a place which is much more likely to be *Canquomorra* and *Jungomar* than either *Mojangà* or *Mahajamba*, namely *Jangoa*, in the bay now known as *Pasindava*. If the longitude he gives is really  $49^{\circ} 28'$  E., he is perplexed indeed, for that meridian, placed upon lat.  $13^{\circ} 41'$  S., indicates a point far away inland, and more to the east of Madagascar than to the west. *Jangoa* is in lat.  $13^{\circ} 46'$  S. and long.  $48^{\circ} 19'$  E. The following are reasons in favour of its being the *Canquomorra* or *Jungomar* visited by the *Union* :—

1.—It is not likely that after bearing up for a bay on the east coast, the voyagers would have got very far round on the west before making a port.

2.—*Pasindava* in most fittingly described as "an exceedingly extensive bay." *Mojangà*, *Mahajamba* and *Narèndry* are all large, but to none of them do the terms "exceedingly extensive" apply so aptly as they do to *Pasindava*.

3.—The country around *Pasindava* strikes every visitor as being in appearance "fertile and beautiful." There is no such scenery anywhere else in the island.

4.—The river *Jangoa* is still navigable by praus and large boats, and was doubtless still more so in 1608, before it changed its course, and before that part of the bay began to silt up.

5.—The neighbourhood has always been a centre of population.

Only one small difficulty stands in the way of the identification here advocated, and that is, the latter part of the names *Canquomorra* and *Jungomar*. But it is safer to identify upon physical features than upon a hopeless muddle of place-names.

W. C. PICKERSGILL.

\* *Jungomar* or *Vinganora*. See note on *Fourth Voyage*, No. IX, p. 16. Kerr places it in lat.  $13^{\circ} 41'$  S. and long.  $49^{\circ} 28'$  E. This is the '*Jangomy*' or '*Jean Gomme*' of Chevreuil in 1673; *Majunga* or *Mojangà*?—S.P.O.

X

## THE RAMANENJANA OR DANCING MANIA OF MADAGASCAR.

**PREFATORY NOTE BY THE EDITOR.**—The word at the head of this article is probably almost an unknown one to those European residents in Madagascar whose personal knowledge of the country does not go back for more than twelve or fifteen years; but to those whose acquaintance with this island, especially with the Capital and the Imèrina province, dates back for a quarter of a century, or even a little less, it was once a very familiar one. It is well known that in various countries and at different epochs strange and inexplicable mánias or movements of the populace have appeared, and have rapidly become epidemic, sometimes finding a vent in dancing, sometimes in singing and hysterical excitement, sometimes in asceticism and self-torture, and sometimes even in suicide and murderous tendencies. These popular delusions form one of the most curious as well as painful and humiliating chapters in the history of mankind, and many books have been published giving full details of their manifestations. Ja,  
ma  
etc  
(u)

About twenty-seven years ago one of these strange epidemics made its appearance in the central provinces of Madagascar in the form of Choreomania—dancing and singing carried to an extraordinary and abnormal extent. Choreomania, chorea, "devil's dance," "Chorea Sancti Viti," "St. John's dance"—for such are some of the various names by which this epidemic has been known—appeared in various countries of Europe during the Middle Ages. Accounts have come down to us of epidemics of this character in Germany in the years 1021 and 1278, and especially, at Aix-la-Chapelle, in 1274, appearing there on St. John's day. In the following century the dancing mania appeared at Strasburg as St. Vitus's dance and continued, at intervals, for a century and a half. The disease known as Tarantism, and which was once common in Italy, was also undoubtedly Choreomania. The dancing generally continued from ten to fourteen hours daily, and from three to six successive days, and this amount of exertion, it is said, gave rise to no apparent fatigue. Very similar to the European form of the disease was the *Tigretier* or dancing mania of Abyssinia, which was characterized by an intense craving for music, and an impulse to dance, leap, or run, with an almost supernatural power of physical endurance while the mania lasted. And it seems probable that a disease called the "Leaping ague," which has occasionally appeared in Scotland, has also some near affinity to Choreomania.

The Madagascar epidemic began to appear in Imerina in the early part of the year 1863. Mr. Ellis, in his *Madagascar Revisited* (p. 253 *et seq.*), thus refers to it: "When I went to the king [Radàma II.], I found him greatly excited by some reports of a new kind of sickness which had made its appearance in some villages at a distance from the Capital . . . The people, he said, had seen strange sights in the air, and heard unearthly sounds; . . . and that those who saw these visions were afflicted with some sort of intermittent disease. It seemed to me a sort of hysteria, and I said, that if the sickness came to Antanànarivo, Dr. Davidson would tell us all about it." "Besides seeing visions and hearing voices, those affected could not, it was said, be kept quiet or retained in the house, but stretched out their limbs involuntarily, ran, or jumped, or danced, wherever they went." "While I was engaged on the high ground of Fàravòhitra, a young girl, very decently dressed, came dancing along the road up the hill, attended by one or two companions. My friends said that she was one of those afflicted with the dancing sickness, and did not know what she did." "On two other occasions I was somewhat troubled with them: I had fixed my camera, when my servant called out that a sick dancer was coming. She wore a light-blue scarf over her shoulders, the ends of which she waved as she danced, not hurriedly, but lightly and deliberately, more like one dancing for pleasure than the unconscious subject of disease." Later on, Mr. Ellis says, "The afflicted persons appeared to be coming into the city daily in increasing numbers. None of the people resident in the Capital seemed to be affected in this extraordinary manner, though it was said that the disease continued to make its appearance in fresh places amongst the villages." These people, running or dancing, and sometimes singing, were accompanied by friends, some carrying bottles of water, as those who were afflicted generally complained of thirst, others clapping their hands and singing and drumming, or making rough music by beating two hollow pieces of wood together."

Mr. Ellis gives many further particulars of these Ramanenjana dancers, chiefly, however, to show how the epidemic was made use of by the reactionary and idolatrous part of the community to work upon the superstitious fears of the king, by connecting them with alleged messages from the spirit world.

It was fortunate that others were resident in Madagascar at the time when Choreomania made its appearance here; and Dr. Andrew Davidson, F.R.C.P.E., etc., who was then and for several years subsequently in charge of the L.M.S. Medical Mission, made a careful examination of the phenomena of the epidemic, and afterwards wrote an account of it. This des-

cription appeared in a paper entitled, "Choreomania: an Historical Sketch. With some Account of an Epidemic observed in Madagascar," and was published in *The Edinburgh Medical Journal* for August, 1867. The proceedings and publications of learned and scientific societies are however so very inaccessible to the general reader, that probably not one in a hundred of our readers will have seen this paper; I therefore make no apology for transcribing Dr. Davidson's very interesting account, which includes a pretty full notice of Choreomania as observed in other countries. This introductory part, however, we are obliged to omit from the demands on our space.

After describing Choreomania as it has been seen in various parts of Europe and in Abyssinia, the doctor says:—

I SHALL now proceed to give a short account of this singular disease as observed by myself and others in Madagascar, a disease so strange that I might well have hesitated to record the facts, if they had not been witnessed by so many whose character and judgment place their evidence beyond question.

In the month of February, 1863, the Europeans resident at Antanànarivo, the Capital, began to hear rumours of a new disease, which it was said had appeared in the west or southwest. The name given to it by the natives was *Imanènjana*, and the dancers were called *Ramanènjana*, a word which comes from a root signifying to make tense.\* The name did not convey any idea of its nature, and the accounts given of it were so vague as to mystify rather than enlighten. After a time, however, it reached the Capital, and in the month of March began to be common. At first, parties of twos or threes were to be seen, accompanied by musicians and other attendants, dancing in the public places; and in a few weeks these had increased to hundreds, so that one could not go out of doors without meeting bands of these dancers. It spread rapidly, as by a sort of infection, even to the most remote villages in the central province of Imèrina, so that having occasion to visit a distant part of the country, we found even in remote hamlets, and, more wonderful still, near solitary cottages, the sound of music, indicating that the mania had spread even there.†

The public mind was in state of excitement at that time on account of the remarkable political and social changes introduced by the then king, Radàma II. It is unnecessary here to explain the nature of these changes, or the way in which they

\* "*Hènjana*, stout, strong, lusty, robust, stiff, tight;" *Dictionary*. The disease itself was also called *Ramanenjana*.—ED.

† The rapidity was certainly remarkable, but not to be compared with what is related of the outbreak of the Child-pilgrimage of Erfurt, when, on 15th of July, 1237, one thousand children assembled, as if by instinctive impulse, without preconcert, and unknown to their parents.



• moved the people generally and roused the superstitious feelings of the lower classes. A pretty strong anti-Christian, anti-European party had arisen, who were opposed to progress and change. This strange epidemic got into sympathy, especially in the Capital, with this party, and the native Christians had no difficulty in recognizing it as a true demoniacal possession. There was universal consternation at the spread of this remarkable disease, and the consternation favoured its propagation. Those affected belonged chiefly, but not by any means exclusively, to the lower classes. The great majority were young women between fourteen and twenty-five years of age; there were however a considerable number of men to be seen amongst the dancers; but they certainly did not exceed one fourth of the entire number, and these also belonged mostly to the lower orders of society.

Very few, indeed scarcely any, Christians came under this influence, no doubt partly because the general spirit of dissatisfaction and superstitious unrest did not affect them directly. Their sympathies were rather *with* those changes, political and social, which disturbed the masses. They were, so to speak, beyond the reach of the current. Their exemption may be partly explained by their superior education, mental and moral, but was also very manifestly owing to their firm conviction that the whole affair was a demoniacal possession of their heathen countrymen, which could not affect them as Christians. They could thus look at it as outsiders, with the interest of observers, without the fear which, in such a malady, is one of the means of its propagation.

The patients usually complained of a weight or pain in the præcordia, and great uneasiness, sometimes a stiffness, about the nape of the neck. Others, in addition, had pains in the back and limbs, and in most cases there seems to have been an excited state of the circulation, and occasionally even mild febrile symptoms. One or more of these premonitory symptoms were frequently observed; there were numerous cases where they were absent. After complaining, it may be one, two, or three days, they became restless and nervous, and if excited in any way, more especially if they happened to hear the sound of music or singing, they got perfectly uncontrollable and, bursting away from all restraint, escaped from their pursuers and joined the music, when they danced sometimes four hours at a stretch with amazing rapidity. They moved the head from side to side with a monotonous motion, and the hands in the same way, alternately up and down. The dancers never joined in the singing, but uttered frequently a deep sighing sound. The eyes were wild, and the whole countenance assumed an inde-

scribable abstracted expression, as if their attention was completely taken off what was going on around them. The dancing was regulated very much by the music, which was always the quickest possible—it never seemed to be quick enough. It often became more of a leaping than a dancing. They thus danced to the astonishment of all, as if possessed by some evil spirit, and with almost superhuman endurance, exhausting the patience of the musicians, who often relieved each other by turns, then fell down suddenly, as if dead; or, as often happened if the music was interrupted, they would suddenly rush off, as if seized by some new impulse, and continue running, until they fell down almost, or entirely, insensible. After being completely exhausted in this way, the patients were taken home, the morbid impulse apparently in many cases destroyed. Sometimes the disease, thus stopped, never recurred; but more frequently there was a return. The sight of dancers, or the sound of music, even in the distance, or any thing which, by association, seemed connected with the disease, determined a recurrence of the fit.

The patients were fond of carrying about with them sugar-canes. They held them in their hands, or carried them over the shoulder while they danced. Frequently, too, they might be seen going through their singular evolutions with a bottle of water upon their heads, which they succeeded wonderfully in balancing. The drum was the favourite instrument, but others were used, and all were acceptable. When there was no musical instrument to be had, the attendants beat time with their hands, or sang a tune which was a favourite amongst the dancers. There is a sacred stone in Imàhamàsina, a plain below the city to the west, where many of the sovereigns of Madagascar have been crowned. It is a large, rather irregular, stone, partly built up so as to round it off, and is about eight feet high and twelve feet in diameter. This stone was a favourite rendezvous for the dancers. They danced here for hours together, and concluded by placing the sugar-cane, as a sort of offering, upon the stone.

The tombs were also favourite places of resort for the dancers. They met in the evenings and danced by moonlight for half the night, or longer, amongst the graves.

Many of them professed to have intercourse with the departed, and more particularly with the late queen (Ranavalona I.). In describing their sensations afterwards, some said that they felt as if a dead body was tied to them, so that with all their efforts they could not shake themselves clear of it; others thought that there was a heavy weight continually dragging them downwards or backwards. They disliked, above all things, hats and

pigs.\* The very sight of these objects was so offensive that, in some cases, it threw them into a kind of convulsion, but more frequently excited their rage. Still more inexplicable was their dislike of every article of dress of a black colour. Swine are reckoned unclean by several tribes in Madagascar, and might thus be an object of superstitious horror. Hats, as associated with foreigners, might similarly be objected to; but what is there in a colour to excite antipathy? Yet this caprice has been so common in this disease, in all its recorded epidemics, as to deserve attention. This phenomenon was likewise observed in the child-pilgrimages of the thirteenth century, which, towards the end, began to assume the characteristics of Choreomania. Feuchtersleben, speaking of the sense of sight, says: "The several colours have a decided, not fully defined, but individually modified, psychical effect. In general, the positive colours, red, yellow, etc., excite the mind, the negative, blue, etc., calm it." If it be difficult to ascertain the psychical effect of colours in health, how much more so in disease. The sense of sight is probably not more depraved than the other faculties and senses. In Abyssinia it has been noticed that the faculty of speech was disordered. The most intellectual of all the senses, that of hearing, is always affected to a remarkable degree, as evidenced not only by the morbid desire for music, but by the illusions connected with this special sense. All this points to a morbid condition, not only of the motor centres, but of the most important ganglia at the base of the brain, a morbid condition chiefly functional in character, and produced by psychical causes.

The disease was associated with national prejudices, religious and political. Did these originate it? I think not. They simply afforded, as it were, the condition, or one of the conditions, of its epidemic manifestation. They formed the bond of sympathetic union among the affected. To become epidemic, this disease must seize some popular idea or superstition, at once so firmly believed as to lay hold of the heart of the people, and so generally as to afford scope for the operation of pathological sympathy. Thus, Choreomania was associated with the religious superstitions of the Middle Ages. Manifestly hostile to the priests, so deep was the hold which the Church exercised over

\* On this subject, see Ellis's *Madagascar Revisited*:—"The afflicted, as they were called, now began to manifest great aversion to pigs, and their companions drove them away. Then they seemed to be troubled at the sight of any covering on the heads of persons in the street as they passed along, and they and their friends motioned to those whom they met to take their hats off; and if they did not, the diseased appeared to be greatly agitated, and would themselves proceed to take the hat off the head of the wearer, so that disturbances in the streets became imminent. An appeal by the party favouring the movement was then made to the king, who issued an order that all persons meeting any of the afflicted should take off their hats, if required, under penalty of a fine on refusal" (p. 266).

even its dissatisfied children, that exorcisms became one of the most potent means of cure. In Madagascar, in the same way, those who know the respect of the natives for their ancestors, and their unbounded reverence for their resting-places, might, *à priori*, have decided the form which such a mania would assume in that country. It must further be remembered that Choreomania never appears as an epidemic, except when the public mind is deeply agitated by some general cause. In illustration of this, it will be remembered, as Hecker and others have pointed out, that Choreomania, in its first outbreak, followed closely upon the 'Black-death,' "and was to be ascribed to the excitement of men's minds, and the consequences of wretchedness and want." The mental and moral state of the people, induced by such great calamities as the Black-death and the inundations of the Rhine, and by the political and religious conditions of the period—the feuds of the barons, the corruption of the church and of public morals, the licentious exercise of power, or the unwarranted resistance of authority—were the exciting causes of its epidemic manifestation.

The disease was rarely fatal; still a few cases of death undoubtedly happened, and these only occurred, so far as I am aware, where the patient was restrained from joining in the dances. It would seem that these actually died from pent-up passion or excitement. The dancing, no doubt, was so far salutary. The music served to regulate and control the wild muscular movements that might otherwise have proved injurious. A most remarkable fact is, that the mere physical exercise, prodigious and long-continued as it is in this disease, seems perfectly harmless. I never heard of its having proved fatal, nor even having produced abortion in pregnant women,—a circumstance observed by Burton\* in his account of the earlier epidemics, and enforced with more than his usual pith and quaintness.

The question of the reality of these phenomena requires a few words, although what has been observed with regard to the disease in other countries applies equally to Madagascar. No one who saw it can doubt that it was perfectly real as a psychopathy, and no one of candour or discrimination will deny that a certain amount of imposture was practised. It was more difficult however than one might suppose, to feign this disease and act it out consistently. The look, manner, movements, and power of enduring physical exertion, were sufficient to distinguish the simulated from the real. It is remarkable, and should never be lost sight of, how often the most contradictory and opposite feelings and motives seem to be mixed up in such

\* Burton's *Anatomy of Melancholy*, p. 80. London: Tegg, 1863.

cases. It can easily be understood how many of these Ramanenjana may have become the victims of a strong morbid impulse, which they at first either feigned or fostered.

How wonderful is the history of human delusion, and how nearly the strongest delusions in some of their aspects border on imposture! Witness the burning for witchcraft in Scotland: never was there any want of witches to burn while the demand for them continued. Poor infatuated women and men were found to confess to the most impossible of crimes, with certain death staring them in the face, so long as the public superstition demanded such victims. A sad record of human folly, darker than anything else I know of, is to be found in some of the volumes of the Wodrow Society's publications.

It must never be forgotten by the physician how strangely interwoven is the spiritual and the physical in man. Especially is it to be remarked how physical disease resulting from psychical causes will often be cured by strong mental impressions. Hysteria has thus been often cured. Boerhave cured epilepsy in children by a threat; the suicidal monomania of the Milesian girls was overcome by the fear of their bodies being exposed after death. In the same way, in Madagascar, the fear of punishment alone, or combined with moral discipline, prevented the mania in many families, when such means were adopted by my advice. Legal enactments almost extinguished it for a time by confining the affected to their own houses, and preventing the public performance of music.

Since this first and most remarkable outbreak, the disease has occurred annually every spring. And from enquiries that I have made, I find that a similar disease has existed in Madagascar for at least fifty years, and is called *Ambo*. It seems in no respect different from Choreomania, except that it is sporadic.

From a careful consideration of these facts, we may safely deduce the following propositions:—

(a) Choreomania is a distinct psycho-physical disease, with its leading features clearly marked and uniform, to be distinguished from modern chorea and from organic nervous disease.

(b) There is always as an ESSENTIAL part of it an uncontrollable impulse to dance, and a morbid love of music; very generally also, peculiar caprices regarding certain colours and objects, the power of speech being occasionally affected, and mania common.

(c) The subjects of this disease are those most liable to hysterical diseases, viz., young women about the age of puberty, and men of an excitable temperament.

(d) Although it may be sporadic, it shows a tendency to become epidemic during periods of general excitement.

(e) In its epidemic form it is usually associated with some prevalent deep-rooted belief or superstition.

(f) It spreads by what we may call pathological sympathy.

(g) When epidemic, it is generally preceded by premonitory symptoms referable to the nervous system, and secondarily induces physical derangement, and sometimes even death.

It would be foreign to the design of this paper to enter into any of the interesting psychological questions which suggest themselves in connection with this subject; such as, the nature of the changes on the nervous centres, the primary cause of such changes, and the organic lesions resulting therefrom. Inquiries such as these must be of deep interest to the physician, the philosopher, and the divine. But this disease is of special practical interest to the magistrate and medical jurist. In Madagascar, this mania, in no small degree, tended to bring about the disturbance which ended in the death of the sovereign and his ministers, and determined a revolution, political and social, in that island. Such an epidemic may occur again in India or other countries, where British interests may be deeply involved; and in such cases it is important that the physician should know the disease, and be able to direct the authorities to a proper view of its nature and cure.

A. DAVIDSON.

ADDENDUM.—It may be here added that since the second outbreak of the Ramanenjana in 1864, there has been no very marked or widespread recurrence of the epidemic. It has however frequently appeared since then among small numbers of people, and in individual cases, in various parts of Imerina. I am even informed that it appears almost every year in country places, and especially at the time when the chief rice crop (the *vàry vâki-ambiaty*) is ripening, i.e., in the early part of April. And there is this to be noted, so say all my informants: those who are affected by the mania are never Christians, but people who have a lurking fondness for the old superstitions, and who would probably become avowed idolaters, were not idol-worship prohibited by the laws. It is even said that people sometimes wish to be thus affected, so that they may have communication with their deceased relatives or friends, as it is believed that the dancers see visions and hear voices not perceptible to those who are in a normal state of health; it seems, in fact, to be connected with a kind of Malagasy spiritualism.

Dr. Davidson has mentioned in the foregoing paper that a somewhat similar disease has been known for a long time past in Madagascar under the name of *Ambo*; this is also said to be something like epilepsy. Among the *Sakalava*, an affliction resembling the Ramanenjana is known under the name of *Trômba*; this appears to be connected with the strange custom of *Bilo* (see ANNUAL VI. p. 18); and this last again, is said to resemble the *Bêtsiléo* custom of *Salamanga* (see ANNUAL VII. p. 82). But we still need fuller information on these strange customs and diseases, which all seem to combine some real nervous and bodily disorder with not a little knavery and superstition.—ED.

## THE ORATORY, SONGS, LEGENDS, AND FOLK- TALES OF THE MALAGASY, PART I.

### INTRODUCTORY HISTORICAL SKETCH.

IN the xvth chapter of *The Great African Island*, an attempt was made to describe a number of the curious ideas and superstitions which are found amongst the various tribes of people inhabiting Madagascar; showing some of the strange notions held with regard to animals, both real and fabulous, trees and plants, lucky and unlucky days and times, ordeals, etc., etc.\* It was, however, mentioned that in addition to these illustrations of folk-lore, a considerable number of folk-tales had recently been brought to light, and that these, from their variety and the length of many of them, could only be properly treated in a separate form. Our principal object, therefore, is now to try and put a few of these Malagasy tales into an English dress, in a more systematic and complete way than has yet been done, giving such notes and explanations as may be necessary to elucidate points which would otherwise be obscure. We shall also give selections from other native productions—fables, games, songs, and nursery tales, as well as illustrations of the imaginative cast of the Malagasy mind as evinced in their public speeches and oratory, with their wealth of imagery and illustration.

Even so recently as twelve years ago it would have been impossible to write much on these subjects, because the materials did not then exist in any collected form. It is only within this very recent period that the attention of European missionaries residing in Madagascar has been directed to the subject of native folk-lore and folk-tales; but as soon as research in this direction was commenced we were astonished at the abundance of material available in all parts of the country to which we had access. It may be thought strange, perhaps, that although many of us had been resident in Madagascar for twelve or fourteen years previous to that date, such tales and legends should have remained so long unknown to us. In explanation of this it may be said, that not only had the needs of the people, and the consequent demands upon missionaries' time and energies, been exceptionally great since the destruction of the idols in the central provinces at the close of 1869, but also that many of these stories being connected more or less with the old idolatrous state of society then passing away, the people were somewhat ashamed of them, and probably thought that we should think them unworthy of serious attention. As soon however as it was seen that we considered them to possess interest, it became comparatively easy to obtain a good many of these relics of primeval times. It must be borne in mind that the Malagasy had no written language before mission work was commenced by the L.M.S. in the interior of Madagascar about sixty-nine years ago. They had, therefore, no books, or manuscripts, or inscriptions, so that all the "unwritten literature"—if we may so call it—which has recently come to light, in the shape of proverbs, oratorical adornments

\* A short supplementary paper was also given on the same subject in the fourth vol. of the *Folk-lore Record*, pp. 46-51.

of speech, songs, legends, nursery stories, and folk-tales, has been preserved, up to a very few years ago, solely in manuscript or by tradition.

The most valuable contribution to our knowledge of Malagasy Folk-tales has been made by the Rev. Lars Dahle of the Norwegian Lutheran Mission, so well known to readers of the ANNUAL for his valuable philological contributions to our pages, who published at Antananarivo in the early part of 1877 a volume of 457 pages, small octavo, entitled *Specimens of Malagasy Folk-Lore*. Except the preface and title-page, this volume is entirely in Malagasy, and is therefore a sealed book to those who are unacquainted with the language in which it is written.

In the same year (1877) several Europeans residing at Antananarivo, chiefly those connected with the L.M.S. Mission, formed a little society for the purpose of collecting and printing the Folk-lore of Madagascar, such as tales, fables and allegories, proverbs, public speeches, etc. Seven numbers of the publications of this society were issued at somewhat irregular intervals, each number consisting of 24 pages, 12mo; but after that year the printing of the work was discontinued, and was not resumed until after nine years' time, when five additional numbers were published, the whole forming a volume of 288 pages (1886).<sup>\*</sup> In addition to the subjects already mentioned, this volume contains specimens of native riddles, and of rhymes which are a species of mnemonics, intended to aid in the learning of the numbers in arithmetic. Of these varied contents also we propose to give specimens and translations.

These introductory remarks would not be complete without a few words in addition, describing what had been previously done by two or three other missionaries in Madagascar, in a somewhat similar direction to folk-lore studies properly so called. In the year 1871 the Rev. W. E. Cousins and Mr. J. Parrett published a small volume of 76 pp., containing 1477 Malagasy Proverbs, a branch of native traditional wisdom in which the language is very rich. A second and much enlarged edition of this work was published in 1885, containing 3790 proverbs arranged in alphabetical order, so as to be easily found. And in the year 1882 the Rev. J. A. Houlder completed a work upon Malagasy proverbs, arranging them according to their subjects under a number of heads, giving also racy English translations and numerous illustrative notes. After a long delay this carefully arranged book will, we believe, be published this year by the English Folk-lore Society as one of its extra publications. It has been justly remarked that "the proverbial sayings [of the Malagasy] present the fullest exhibition of the grade of mind among the people, both intellectually and morally."

In 1873, Mr. Cousins published another small volume of 58 pp., containing twenty-six *Kabdry* or royal and other speeches and proclamations, dating from 1787 to 1872. These public addresses are not only of considerable interest as historical documents, but they have a great value as preserving archaic words and obsolete or obsolescent forms of construction, and thus throwing important light upon the language. "This," remarks the Rev. D. Griffiths, who with the Rev. D. Jones, did the chief work of reducing the Malagasy tongue to its received systematic written form, "has reached its present state of excellence merely by

<sup>\*</sup> *Folk-lore and Folk-tales of Madagascar*. L.M.S. Press.



ordinary conversation, speeches in the public assemblies (*i.e.*, *kabary*), and pleadings in the courts of justice." A second and enlarged edition of this work (64 pp.) was issued in 1887.

Three years later still (in 1876), Mr. Cousins issued another small volume of 56 pp., containing about a score native accounts of Malagasy Customs, including the circumcision observances, the administration of the *Tangena* poison-ordeal, marriage and burial ceremonies, and those connected with the New Year's festival, etc.

An intelligent native officer named Rabezàndrina (more recently known as Rainandriamampàndry, 15 Honours, Governor of Tamatave) published in 1875 a pamphlet of 42 pp., giving a complete version of a favourite Malagasy story, the history of two rogues named Ikòtofètsy and Imàhakà, together with a shorter story. The former of these native tales was rendered into English by the late Mr. James Cameron of the L.M.S. Mission, and was published in 1871, in the *Cape Magazine* issued at Cape Town;\* and eight or nine years ago, the late Miss Cameron, daughter of the gentleman just mentioned, contributed to the same magazine English renderings of half-a-dozen of the tales given in Mr. Dahle's collection.

Translations into English of about a dozen Malagasy Folk-tales have been made by the Rev. J. Richardson, of the L.M.S. Mission, and these (as our readers will remember) were published in the 1877 and 1878 numbers of the ANNUAL. And three or four others were translated by the Rev. G. Cousins, in the *Leisure Hour*, June, 1888.

Two or three specimens of the Fables and folk-tales may be found in some other publications: in Copland's *History of the Island of Madagascar* (1822), in Ellis's much more valuable and complete *History* (1838), in the Rev. E. Baker's *Outline of a Grammar of the Malagasy Language* (1845), and in some papers entitled, "Madagascar à Vol d'Oiseau," in the *Tour du Monde* (x. liv. 247, 248 and 249), and subsequently translated into English in *Illustrated Travels*, vol. i. Readers of the ANNUAL will also recollect some four or five translations by Mr. Baker of Malagasy Poems, taken from the *Journal of the Bengal Asiatic Society*, 1832, and reprinted in No. X. pp. 167-177; as well as Mr. Pickersgill's English version of the ballad of Biàzavòla in the same number (p. 247). Mr. Pickersgill's poetical versions of native *kabary* (ANNUALS IX. and XI.) will also be remembered, and Mr. W. E. Cousins's prose translation of the same (in No. IX.). These, I believe (except the following papers, which were originally published in the *Folk-lore Journal*, vol. i.) comprise almost all that is at present available in an English form of Malagasy folk-tales, songs, and fables.

A little, but only a little, has been published in the French language in the way of translations of Malagasy songs and folk-lore. Probably the earliest of these are two fables given by Flacourt in his work *Histoire de la Grand Isle Madagascar* (1661); these are entitled respectively, "Fable de l'origine de péchéz," and "Fable de Rasoanor" (pp. 60-63). More than a hundred years later, several Malagasy songs were translated in a brochure entitled, *Chansons Madecasses, traduits en François, suivies de Poésies fugitives; par M. le Chevalier de Parny*. A Londres: 1787. The

\* Another translation has been given by the Rev. G. Cousins in the *Leisure Hour*, Nov. 1888, pp. 759-761.

Malagasy songs there given are twelve in number: some of them are love songs, of a kind hardly suitable for reproduction in our pages, others are warlike, and others again are the complaints of captives. A specimen of the second of these classes is given in a foot-note;\* but it is a pity that the writer did not preserve the originals of these translations, which strike one as being rather free in some places.

Mention must also be made of a work in Malagasy, which was printed at the Jesuit Mission Press in Antananarivo at intervals between the years 1873 and 1881. This is a publication in three crown octavo volumes containing altogether about 2059 pages, and is a *History of the Kings of Imerina* (the central province), derived from native sources: manuscripts written during the last few years, and traditions. This work gives, in addition to the political history, a considerable amount of information about the native customs, as they are supposed to have successively arisen from the earliest times, including not a little folk-lore: native beliefs as to supposed supernatural beings, divination, witchcraft, the idols, etc.

Several articles containing information on folk-lore are also included in the contents of a Malagasy work entitled *Isan-kérintaona* or 'Annual,' but of which only two volumes (for 1876 and 1877) were published at the F.F.M.A. Press in Antananarivo.†

This historical introduction to the subject will indicate what has been done hitherto make Malagasy folk-lore accessible to students, and what has as yet been translated into English or French, although a considerable amount is now printed in Malagasy from native accounts, obtained either orally or from manuscripts.

In these papers large use will be made of Mr. Dahle's collections, partly because few of these have yet been translated, and also because his book, although professing only to give "specimens" of Malagasy folk-lore, has a completeness of its own, as it includes examples of all the divisions of this kind of literature, as well as some pieces from all the chief provinces of the country.

Mr. Dahle says of his work that it is restricted to such branches of folk-lore of which hardly anything had then been published, viz., adages, riddles and conundrums, songs, oratorical flourishes of speech, children's games, bogey stories, and tales and fables. It does not include any strictly historical traditions, many of which are available; and although

\* *Chanson III.*—Quel imprudent ose appeler aux combats Ampanani? Il prend sa zagaye armée d'un os pointu, et traverse à grands pas la plaine. Son fils march à ses côtés; il s'élève comme un jeune palmier sur la montagne. Vents orageux, respectez le jeune palmier de la montagne.

Les ennemis sont nombreux. Ampanani n'en cherche qu'un seul, et le trouve. Brave ennemi, ta gloire est brillante; le premier coup de ta zagaye a versé le sang d'Ampanani. Mais ce sang n'a jamais coulé sans vengeance. Tu tombes, et ta chute est pour tes soldats le signal de l'épouvante. Ils regagnent en fuyant leurs cabanes. La mort les y poursuit encore. Les torches enflammées on déjà réduit en cendres le village entier.

Le vainqueur s'en retourne paisiblement, et chasse devant lui les troupeaux mugissants, les prisonniers enchaînés, et les femmes éplorées. Enfants innocents, vous souriez, et vous avez un maître!

† In various numbers of the ANNUAL will also be found articles on different branches of folk-lore; e.g., "Remarkable Burial Customs among the Betsileo" (I.); "Tanàla Customs, Superstitions, and Beliefs" (II.); "Malagasy Conundrums" (II.), by Rev. J. Richardson; "The Betsileo: Social and Religious Customs" (III.); by Rev. G. A. Shaw; "Customs at Death and Burial among the Sihànaka" (VI.), by Rev. J. Pearse; "Malagasy Fady" (VII.), by Mr. H. F. Standing; "Some Popular Malagasy Superstitions" (VIII.), by Rev. S. Jorgensen, etc.

only printed for private circulation, Mr. Dahle thought it right to omit a good many pieces containing impure expressions and allusions, by which omissions the collection has been reduced very considerably. Whatever is found in the book is given full and unchanged, nothing being added by the editor but the descriptive headings. Mr. Dahle notes that many of the tales occur in different forms in different provinces, and that had space allowed, other 'variants' might have been added to those which are given in the work. He also says that, although care has been taken to include only purely native productions, it is possible that some of the elements contained in a few of them may have originated from, or at least have been influenced by, foreigners to a certain extent. Some of the tales, he remarks, "have a rather suspicious Oriental colour; while the curious ideas in some of them, the fine and florid, often very obscure, language of others, and the interesting form of not a few of the poetical pieces (e.g., the often very prominent *parallelisms* so characteristic of Oriental, and specially of Hebrew poetry), must claim the attention of many who are able to read them in the original."

Nothing further need be added to these introductory remarks except to note that in addition to their value in other ways, these collections of folk-lore and folk-tales are of considerable use as throwing light upon the Malagasy language, by preserving numerous words and idioms which are seldom or never heard in other connections. Should we eventually be able to procure the variants of many of the chief stories from all the provinces of the island, the service which folk-tales will render in studying the various dialects of Malagasy can hardly be overrated.

#### CHAPTER I.—ORATORY AND FIGURES OF SPEECH.

The first of the nine sections into which Mr. Dahle's book is divided treats of *Hain-tèny làvalàva*, lit., "Somewhat lengthy Clever Speeches," i.e., oratorical flourishes and ornaments of speech, which are occasionally expanded into an Allegory. As with many peoples of lively imagination, but who have had no literature, the Malagasy are, as a rule, ready and fluent speakers, and many of them have considerable oratorical powers. The native language is pleasant and musical in its sounds, full of vowels and liquids, and free from all harsh and guttural utterances; and the mental habits of the people induce a great amount of illustration in their ordinary speech, which is full of proverbs and similes. In their more formal and public addresses these are also found in abundance, as well as allegories, fables, and figures derived largely from natural objects.

Here is one of the first examples, which is entitled,

#### *The Desolate one forsaken by Friends.*

I (am) a straggling piece of peel from the young shoots of the plantain-tree; but when I still had possessions, while I still was in happy circumstances, then I was loved by both father's and mother's relations. When I spake, they were shamefaced; when I admonished, they submitted; so that I was to father's relatives their protection\* and glory, and to mother's relatives the wide-sheltering sunshade; and was to them as the calf born in the summer,† both amusement and wealth, of whom they said: This

\* The word (*hiady*) thus translated means, literally, a post set up as a protection to taboo a house or piece of ground.

† That is, in the rainy season, when there is plenty of fresh pasture.

one is the great *voàra* (a species of *Ficus*), ornament of the field ; this the great house, adornment of the town ; this is protection, this is glory, this is splendour, this is boasting ; this will preserve the memory of the dead, for (he is as) wide-spreading grass in the deserted village, and succeeding his fathers. Yes, they thought me a memorial stone set up, and I was (received) both with shoutings and acclamation.\*

Nevertheless I am but a straggling piece of peel from the shoots of the plantain-tree ; and now I am left spent and desolate and having nothing, and hated by father's family, and cast off by mother's relations, and considered by them but a stone on which things are dried in the sun, and, when the day becomes cloudy, kicked away. Yes, O people, O good folks, for while I admonish you I also reproach myself, for I am both reproached and openly shamed. Wherefore, hark ye, take good care of property ; for when property is gone, gone is adornment ; and the lean ox is not licked by its fellows, and the desolate person is not loved. So do not waste the rice, for those whose planting-rice is gone, and who have to enter into the fellow-wife's house, are in sad case. Do not trample on my cloth, for I cannot arrange the cotton to weave another, and it is ill having rags to wear in the winter.

It will be observed how large a number of figures there is in these few sentences ; some of the allusions are explained in foot-notes, but other points are somewhat obscure to those unacquainted with the habits and customs of the Malagasy.

Many of the shorter of these "flowers of oratory" have the sententious forms of the proverbs ; and others take the shape of a conversation between imaginary persons, whose names often afford a key to the sentiments they express. The language readily lends itself to such coinage of names ; some one of half-a-dozen different prefixes being joined to words or short sentences immediately turns them into proper names, each appropriate for the speakers, whether male or female, old or young, etc.

Very frequent allusions are made to fidelity to friendship, which is a strongly marked feature of the Malagasy character, as shown by the practice of brotherhood-by-blood covenants. Here is an example, entitled,

#### *Mutual Love.*

Let us two, O friend, never separate upon the high mountain, nor part upon the lofty rock, nor leave each other on the wide-spreading plain. For, alas ! that this narrow valley should part such loving ones as we are ; for thou wilt advance and go home, and I shall return to remain ; yet if thou, the traveller, shouldst not be sad, much less should I, the one left. I am a child left by its companions, and playing with dust† all alone ; but still, should I not be utterly weak and given up to folly, if I blamed my friend for going home ?

Some of the pieces remind us of the English nursery rhymes of the type of "the old woman who could not get home to get her husband's supper ready ;" as is the following :

#### *The Bird who could find no Place to lay her Eggs.*

I (sought to) lay, says the bird, upon High-tree.‡ The high tree was blown by the wind ; the wind was stopped by the hill ; the hill was burrowed by the rat ; the rat was food for the dog ; the dog was controlled by the man ; the

\* Memorial stones are largely used in the central provinces, and consist of massive monoliths erected with immense labour and expense.

† The common amusement of native children, equivalent to the 'mud pies' of English children.

‡ See foot-note, over-leaf.

man was conquered by the spear ; the spear was conquered by the rock ; the rock was overflowed by the water ; the water was crossed by little 'red-eye' (a small bird).

Several of the pieces in this section of the book refer to divorce, and to the attempts often made to bring back to the husband a wife who had been put away. This facility of divorce is one of the least pleasing features of Malagasy society ; the power being usually in the husband's hands, and being often exercised for the most trivial reasons, and effected in an absurdly easy fashion. It will be seen however in the following piece, that the woman was sometimes quite equal to her husband in power of repartee, and could speak with stinging sarcasm of his fickle conduct and heartlessness :

*Sending home a divorced Wife.*

Where away, O pair of bluebirds ? are you going east, or going west ? If to the west, I will bind you hand and foot to tell to *Ràbarimàso* that for a whole year and throughout seven months thy friend has not bathed in warm water, but tears longing for thee have been his bath. Therefore say : May you live, says *Ratsàrahàbitsimbahofàty*† [that is, the husband], for thou art not forgotten by him, though the distance be great, and though the streams be in flood. And when *Rafàraèlanàndeferana* [Mrs. Long-enduring] heard that, she said : Upon my word, I am astonished at thee, *Andriamatôa* [a term of respect to an elderly man or eldest son] ; when you married me, you thought the road was not big enough for me, but when you divorced me, you considered me a mere nothing ; when you asked for me, you spread out like the broad roof of the house, but when you put me away, you folded up like its gable. So enough of that, *Andriamatôa*," etc.

And so she proceeds to pile up figure upon figure to illustrate his ill-treatment of her ; telling him :

"Perhaps you think me a poor little locust left by its companions, which can be caught by anyone having a hand." "A protection," she tells him, "can be found from the rain by sewing together the mat umbrella, but it is *love* that is spent, and *love* that is scattered, and *love* that has removed, and the cut ends of the threads are not to be joined together."‡

To all this the husband rejoins :

"Unfortunate that I am, *Rafàra*, wife beloved, I sent unfit persons ; to get you home were they sent, nevertheless to keep us separate is what they have accomplished ; so come home then, *Rafara*, for our children are sad, the house is desolate, the rice-fields are turned into a marsh," etc.

Whether these efforts were successful is left to conjecture ; one may hope that after such moving appeals the injured and indignant wife came back to her family ; especially since they are followed by this additional address by the husband to the people at large to help him out of his difficulty :

*Second speech of Ratsàrahàby.*

Help me, good folks, for the fowl I had all but caught has flown off into the long grass, and the bird I had almost obtained for rearing has been carried off by the flood, and the bull I should have obtained for fighting has

\* Here personified by the addition of the personal prefix *Ra*, and the word for tree meaning strictly 'the lofty one.'

† There is some significance in this long name, but it is not quite clear to me from its literal meaning.

‡ Referring to the threads used in weaving cloth.

escaped to the top of the high mountain. So help me, good people, and say thus to Rafara : I will be humble in spirit without obstinacy, and will agree to what you have done ; for if thou art as the storm destroying the rice, let me be the tree-trunk plucked up. And if thou art as hail destroying the rice, let me be the wide field on which it is scattered. And if thou art as the thunderbolt falling to the earth, let me be the rock on which it dances. And if thou art as the whirlwind blinding the eyes, let me be the lake, substitute for eyes. Because gone is my obstinacy, for gentleness only remains, for there is no support of life, since Rafara is the support of life ; so send me home Rafara, lest I become a fool.

In Malagasy philosophy, as in that of all nations, there occurs frequent mention of life and its shortness, and, in the absence of any certainty as to a future life, a sentiment somewhat parallel to the old heathen saying, "Let us eat and drink, for to-morrow we die." For example :

*Take your fill of Pleasure while you live.*

O ye prosperous people, O ye well-to-do folks, take your fill of pleasure while you live ; for when dead and come to the "stone with the little mouth" [the native tombs, among the Hova, are made of large undressed slabs of blue granite, in one of which a small entrance is cut], it is not to return the same day, but to stop there to sleep ;\* it is not to visit only, but to remain. The covering stone† is what presses down over one, the red earth is above the breast, a temporary roof and tent walls surround one ;‡ no turning round, no rising up.

Another piece speaks of

*Things here on Earth not enduring ;*

and after referring to the different leaves, fruit, and flowers of various trees, proceeds to moralize thus :

Thou dost not perhaps remember the sayings of the ancestors : Consider, O young folks, your stay here on the earth, for the trees grow only, but are not joined together, for if they were, they would reach the skies. But it is not thus, for they have their time of springing, and of growing, and of being cut down. And just so with men : to them come prosperous days, and days of misfortune ; they have their days of youth, and of old age, and of death ; but those who die happy and in heaven follow Impôina§ and Radâma,§ they are the fortunate ones.

A characteristic feature in native ideas is shown by another piece, which enforces the doctrine that "It is better to die than to suffer affliction."

Many of the compositions in this section of the book are in praise of wisdom and denunciation of folly ; in fact perhaps no people are more ready to give and receive good advice than are the Malagasy. It is universally recognized as the privilege of all to give admonition to others, even to those highest in rank, if it is administered in the form of advice or *ânatra*.

\* Here is a play upon native words (*môdi-mândry*) which are used alike for sleeping away from home for a night, and also for dying.

† The four stones forming the sides of the Hova tombs are covered in by one huge slab, called the *rângolâhy*.

‡ Referring to the native customs at a funeral, and in making a new tomb.

§ Hova sovereigns : the first of whom, also called Andrianimpôinimérina, died in 1810, the second in 1828.

There are a great many references to animals in these admonitions; almost every bird known to the Malagasy is used as a simile, and its habits are described with great accuracy; so that a complete collection of all the references to the animal life of Madagascar found in the proverbs and fables would throw no little light upon the fauna of the island. (See article later on, on Malagasy Birds.)

Here is a curious piece in the form of a dialogue, exhorting those in sorrow not to hide it from their friends:

*The Bereaved one questioned and attempting to hide (Sorrow).*

Who is that person before thee?

I know not, for I did not overtake him.

Who is yonder person behind thee?

I know not, for he did not overtake me.

Why then are you so erect?

I am not erect, but chanced to rise.

Why then do you sob so?

I am not sobbing, but merely yawning.

Why are you as if beside yourself?

I am not beside myself, but am thinking.

Why are you as if weeping?

I am not weeping, but have got dust in my eye.

Why are you sighing?

I am not sighing, but have a cold.

Why are you weebegone?

I do not wish to appear weebegone, but my child is dead!

Then she bursts into a flood of tears and makes all the people sorry.\*

Consider well! do not hide your calamity.

A fatalistic sentiment appears in the following, entitled,

*To Die is not to be avoided.*

The guinea-fowl when flying departs not from the wood, nor, when hiding, from the earth, and the *fandro†* shrub dies on the ground. All the hairs of the head cannot bind death, and tears cannot hold him; therefore give up the dead, for the earth is the forsaking-place of the beloved ones, the dwelling of the living, the home when dead.

Here is a bit of "tall talk," in which the powers of nature are invoked to help against an enemy. It should be noted that all the natural objects mentioned are personified by adding to them the personal prefix *Ra-*, which can hardly be paralleled in English by our prefixes Mr. or Mrs., etc., without a somewhat comic effect, which is quite absent in the Malagasy:

*The Far-reaching power of the Imagination.*

The sun is indeed my father, the moon is my mother, the stars are but my subjects; Bêtsimitátatra [the great rice-plain west of Antananarivo] is my rice-plot, the meteors are my guns, and the thunderbolts are my cannon, with which I will fire at those who hate me.

Here is another example of the same habit of boasting of one's own power, in the form of a dialogue between two men:

\* When a death occurs in any house, the relatives and friends assemble in large numbers to condole with the family, to *mitsapa alàhelo*, i.e., "to touch sorrow."

† *Gomphocarpus fruticosus*, R. Br.

*Each Boasting.*

Says Rafàralàhy [*i.e.*, last male, or youngest son]: "Art thou Andrianàivo, who art child of Naméhana: rising up, eating the *aviàvy*\* (fruit), and when stooping, eating *amòntana*\* (fruit); at evening playing with citrons, and in the morning bowling lemons?" "Just so."

Then says Andrianàivo [*i.e.*, middle male]: "Art thou Rafàralàhy, who art child of Iaràivo: when poor, having money to spend; and when rich, not sought for by creditors; riding on horseback, yet not calumniated, and carried in a palanquin, yet not abused?" "Just so."

A careful study of these Malagasy sayings, together with the native proverbs, throws considerable light upon the notions of the people as regards morals. Many of them contain much good counsel as to the avoidance of various vices and follies, together with rebukes of the loose native habits with regard to marriage; for example, there is one against forsaking one's wife to marry a richer one! Then we have warnings against bad company, gluttony, dishonesty, and prodigality, and very many against lying and liars. The good and the evil man are compared, patience under misfortune is commended, and we are cautioned against trusting in appearances, in the following allusion to the habits of the crocodile, the most feared of all the animals inhabiting Madagascar:

*The Slow-going one is to be Feared.*

A red male crocodile going down the Ikópa with the stream, its sly advance unheard, its movements unobserved, lying still in the pools without diving, and lying in the water without paddling. So then, say I, good folks, perhaps the old fellow [*lit.* "your senior"] is dead and therefore does not show up, or is somehow prevented and so does not return.

But the people say: 'Thou art indeed childish and dost not perhaps consider that the crocodile, when he lies in the deep pools and does not dive, there is the warm place where he sleeps; and when he lies still in the water, not moving a foot, that there is the place where he obtains his food. So let that teach you that the old fellow is not dead by any means, but has still an eye to business.

This reference to the crocodile is but one out of scores of passages noticing the habits of animals in these pieces, and which reveal, as already remarked, most accurate knowledge of their habits. In one of them the eels in the Lake Itásy are represented as in council, expressing their disappointment that a stone breakwater, made to prevent a too great rush of water out of the lake, has not proved a place for their greater enjoyment, but where they may more easily be caught. In another piece the different cries and habits of various birds are compared, and the unfitness of all for carrying a message, except one, the *Vorondrèo* (*Leptosoma discolor*, a peculiar species of roller), which has a loud distinct cry; while as to others, the *Filatra* (a species of warbler, *Pranticola sybilla*) would be always looking for food; the *Sòy* (a species of *Nectarinia*) would be too melancholy; and the *Fôdy* (the cardinal-bird, *Foudia madagascariensis*), which goes in flocks, would always be flying off with its companions.

This observation of bird life is also illustrated in a short piece which enforces the familiar English household maxim that

\* These are both fine trees, very common in the central parts of Madagascar; they are species of *Ficus*, both bearing edible, though not very palatable, fruit.



*Every thing has its Place.*

The whitebird [a species of egret, *Ardea bubulcus*, which feeds on the flies and parasites of cattle] does not leave the oxen, the sandpiper does not forsake the ford, the hawk does not depart from the tree, the valley is the dwelling of the mosquito, the mountain is the home of the mist, the water holes are the lair of the crocodile. And the sovereign is the depository (lit. "resting-place") of the law, and the people are the depository of good sense.

Equally numerous are the allusions to the various trees and plants and their qualities, and the way in which they illustrate human weaknesses and follies.

Love of children is a marked feature in these native sayings. They are called "the fat (that is, the best) of one's life" (*mènaky ny aina*), and are said to be "loved like one's self," etc. Equally distinct is the love of home and of one's native place: "Yonder road," says one piece, "is dreary and difficult, twisting about here and there, but for all that it is the way leading to the door of the house of father and mother."

Still more fully and pathetically is this warm family affection expressed in the following lament of a captive taken in war, with which we may conclude this division of the subject:

*Oh that I could see Father and Mother !*

Where away yonder, O bird, art thou speeding away by night? Hast thou lost in the game, or art thou fined, that thou thus hastest away?

Neither in gaming have I lost, nor a fine do I dread; but the road to be travelled I sweep over, and in the place of enjoyment do I rest.

Ah, just so, O bird; would that I also were a bird and could fly, that I might go yonder to the top of the high tree to look over and see father and mother, lest they should be dead, lest they should be ill; long have we been separated; for *we* are held in bondage by the people, and *they* are persecuted with gun and spear. We are slaves here in Imerina (the central province and home of the dominant Hova tribe); manure is our friend, the spade is our brother-by-blood, and the basket is our companion.\* Our necks wait for the wooden collar, our backs await the irons, and our feet the fetters. And father and mother sigh out their lives at Vòhibè; so salutation (lit., "may they live") until we meet again, for long has been our separation.

Most of the principal towns and villages in Imerina are noted for some circumstance or other, either in their natural position, or their productions, or the disposition of the people, as clever, covetous, or brave, etc. This is sometimes expressed in stinging proverbs, which are quoted by their neighbours with great gusto, and are heard with equal chagrin by the unfortunate objects of these satirical *bon-mots*. Thus the people of Ambòhipèno are held up to scorn in the saying, "The arums of Ambòhipèno: they had rather let them rot than give one to a neighbour."

(*To be continued.*)

JAMES SIBREE, JUN. (ED.)

\* Alluding to the constant work in the rice-fields done by the slaves, in digging, carrying manure in baskets, etc.

X

NOTES ON THE MALAGASY BEE (*APIS UNICOLOR*):  
ITS HABITS, ENEMIES AND CULTURE.

IF we agree with those entomologists who consider that the honey bee has wandered westward from India and the East, spreading northwards and southwards over Europe and Africa, and owing to climate and isolation has slightly altered its habits and appearance in the different regions where varieties are found, then the comparison of the English bee (*Apis mellifica*) with the Malagasy bee (*Apis unicolor*) presents special interest, for in them we can see in what way, and to how great an extent, the two opposite extremes of migration have differed during thousands of years of separation.

Supposing also that the social bees have, as is only in accordance with the laws of evolution, sprung from the solitary bees, we must admit, I think, that this development must have been complete before the great westward migration began; for had this not been the case, it is scarcely likely that there would have been so great a similarity in the result, as I shall point out in the course of this paper. Yet again, there must have been some land connection, or else some great change of habit common to all the varieties—which is contrary to the supposition above—seeing that it would be impossible for a swarm headed by its queen to cross so large a stretch of water as the Mozambique Channel, or perhaps even the English Channel, or, if not impossible, yet contrary to all present habits; and yet a single queen, or a queen followed by one or two neuters only, cannot raise a colony. Thus we see that there is no small geographical and scientific interest in the subject before us.

*Apis unicolor* differs but little in appearance from *Apis mellifica*, so slightly in fact that one is surprised; many of the European varieties differing much more from each other, as also some African varieties. *Apis unicolor* is smaller, darker and less hardy, with less decided rings on the abdomen. The drones are nearly identical. In both, the queens have reddish-brown legs, whereas the workers have black legs; the queen of *Apis unicolor* perhaps having redder legs than that of the European variety, and in general appearance the latter more closely resembles the worker. The queen of the Malagasy bee has a most beautiful blueish-black sheen over its abdomen, and the hair on the thorax is lighter than that on the neuter. Both varieties have the peculiarity of a curved sting in the queens, and a straight sting in the workers. We thus see how 'true' the bee

has kept through countless generations and under vastly different circumstances. No other domestic animal has varied so little or thrown so few 'sports,' for there are only twelve species of *Apis* known, and but few varieties, differing slightly in colouring and habits. This no doubt is due in a great measure to the extreme difficulty of artificial selection, yet *Apis* is emphatically an in-breeder, brother and sister almost invariably pairing when in their native haunts; so that varieties, or even malformations, might have been expected to a much larger extent than is the case.

In a country too so isolated as regards its fauna as Madagascar, we might easily have expected some more decided type of *Apis*, or none at all—as is the case in Australia—but such we see is not the case in appearance; and in habits too, there is as great a resemblance. They choose the same situations for their hives, if left to nature. They multiply in the same way, by the old queen leading the first swarm, and the young ones the casts.\* This last fact is important where the geographical distribution is concerned, for an old queen is generally heavy with eggs, and in any case is not accustomed to fly far, certainly not across the sea; whereas the young active queens who lead the casts are still unfertilized, and must be in the proximity of the drones after a site has been found, for not only workers but also drones must follow in her wake. Then again, the drones are idle and are killed off at certain seasons. Fertile workers appear if the hive is queenless, but, as in England, only produce drones. They gather the same food in the same manner. Even in the minutiae of habits they are the same. They hum if excited, and when ventilating their hives. They only gather from one species of flower at one flight, a habit among the solitary bees as well. Even their enemies are the same, the wax-moth, the *Sphinx atropos* (death's-head moth), and the rat. Some of the diseases I have not found, but possibly these are products of a higher state of domesticity. Their very behaviour when robbed or queenless is the same. Both will rear queens from worker eggs on an emergency, and in precisely similar a manner, by enlarging the worker cells and altering the food; both diminish the entrance if harassed, and cling in clusters for warmth and for wax making.

Yet there are many slight differences. Drones seem to be bred with much more regularity by the English bee. There is one great breeding just before the swarming season, and another small one later on; whereas the Malagasy bee seems to breed drones on and off all the year round. There is seldom a month

\* A 'cast' is a swarm led by a newly hatched or virgin queen. The first swarm is led by the mother queen; all others that follow from the same hive are 'casts.'

in the year, summer or winter, when drone brood cannot be found. Then again, the English bees kill their drones off in autumn, the massacre lasting perhaps a day, and not a single drone being left, except in the case of a queenless hive; but the Malagasy bees, though they kill them off to a large extent when food begins to run short in autumn, yet they seem always to leave a few, even in the most prolific colonies, in fact, the greatest number was left in the hive that had the most fertile queen among mine last year. This year however, all the drones were killed,\* but not in one day, only a few at a time. This, I fancy, was owing to food being short on account of the ravages of *Sphinx atropos* earlier in the year.

Difference of climate most likely accounts for this, for the drones being perfectly lazy, collecting no honey and consuming a considerable quantity, would in England help to exhaust the stores before spring, and hence greatly endanger the chance of the colony surviving the winter; but in Madagascar the bees work all the year round without intermission—except perhaps a day or two at most in Imèrina—consequently there is no such danger, for they even find sufficient food to raise brood during the winter months. Only in one month during the whole of last year did I notice the hives without brood, and possibly there may have been some then, for not having the colonies at that time in hives with movable frames I could not examine the centre, where in all probability it would have been. The fact of the bees keeping their useless drones after the swarming season was past and breeding more, would, one would think, point to a second swarming season in countries where brood can be raised all the year round; yet I have never seen or heard of such a thing here, in fact these bees seldom swarm at all unless cramped for room. I have now two hives that have not swarmed for three seasons; but one that was in a small native water-pot, and full to the mouth, threw a very large swarm and four casts in one season, which weakened it to such an extent that, eventually losing its queen during fertilization, it died out. I watched it to see if there were any fertile workers, which I found to be the case. These fertile workers are supposed to be those which have been bred near the royal cells, and have inadvertently obtained a small amount of the royal food during the larva stage; but they never produce the eggs of workers, only those of drones, and cannot save a colony from extinction.

*Apis unicolor* is much more gentle when handled than *Apis mellifica*, and, like the Carniolan bee, which has been introduced into England from south-western Austria, can be mana-

\* Since writing the above I have discovered the presence of drones in two of my hives which have fertile queens.

ged easily without the need of smoke or veil; yet this is not always the case, for I have known some colonies much more fierce than others. Two of my hives I could never open without a lighted cigar in my mouth, though they would allow me to do anything I liked with them *with* that accompaniment. I have even taken a cluster of bees from some hives with my bare hand, and have thus cleared the combs with impunity; and when cutting out comb from a native hive, the bees always seem to be much more intent on saving the honey spilt than on attacking the intruder. It is a well known fact that if a bee is smoked, it immediately fills itself with honey, and when gorged is much less inclined to sting than at other times; but in the case of the cigar it was otherwise, for I seldom used it to smoke the bees, but merely held it between my lips; possibly they recognized their master by the smell. One might imagine that such gentleness was the outcome of long intercourse with man, but considering in how very few places the honey bee is 'cultivated' in Madagascar, and how very great a percentage of them are wild, or come directly from wild stock, this can scarcely be the reason; more especially when we remember that the English bee has been 'cultivated' to a very much greater extent and yet is the more savage of the two. It may be that the Malagasy bee, never having had to contend against the larger enemies, such as the bear, has less inclination to use its sting against man; but it is much more likely to be simply a difference of temperament, often noticeable in wasps as well as in the different varieties of *Apis*.

Another difference which points to a less highly domesticated state, is the great difficulty of hiving the swarms. In England you take your swarm, throw it gently down in front of the hive you wish the bees to enter, and they immediately run in and take possession. In Madagascar if you do the same, you will be woefully disappointed; they will run in and perhaps stay there an hour, sometimes even a day, sometimes not five minutes, and then find out it is not to their liking. Tempt them with comb filled with brood—a temptation which rarely fails in England—and they will not look at it. Confine the queen by force, and if it be a cast, they will soon forsake her, to die of hunger. Confine an old queen, and they will occasionally stay, but even should she have begun to lay, and you enlarge the opening, there is every chance she will lead out the swarm and leave her progeny to die.

If left to themselves they will choose the most inhospitable looking places, and, unlike the English bee, seem indifferent as to the comb being exposed to view or not. I have seen a swarm in half an old clay cooking pot with the bottom knocked

out, and it was not from any love of an old home, for there was not above an inch of comb formed, and that had no brood or even eggs in it. I have seen another in the middle of a low palm tree entirely exposed, but this was unusual.\* Heat or damp seem to have but little effect on them, for I have not unfrequently seen hives with an inch of water in the bottom, and the side combs full as well, yet the bees were working hard, and were to all appearance in no way inconvenienced; yet this must have happened every week, if not more frequently, during the rainy season.

When the Malagasy wish to increase the number of their hives, they place several of the hollowed tree trunks they use for that purpose in the neighbourhood of a wild colony in the forest. As soon as this throws off a swarm, it usually takes to one of the many convenient places put in readiness, and thus a new colony is started; then the trunk is taken to the village. But sometimes, in taking a wild nest, they catch the queen and amputate a wing, so as to render flight impossible; they then place her in a hive, which they fix as nearly as possible in the position of the nest destroyed, and the bees cluster round her.

Owing to the difference of climate, these bees will rear a colony from a very much smaller beginning than is possible in England, where sufficient bees must be bred to ensure a high temperature during the winter as well as an abundance of food, for in Madagascar the temperature is seldom, if ever, low enough to kill the bees, or even to render the queen unfertile, a not unfrequent event in England. I once saw a swarm here—the whole of it, comb, bees and all, would have gone into a tumbler—it was quite exposed to the wind and sometimes to the rain, yet the bees were working quite happily, and the queen was fertile. I took it and placed it in what I considered a most comfortable bar-framed hive, with combs worked out ready for them; next day they left it. I found them on a tree near, and put them back, confining the queen and giving them young brood; they took no notice of the brood till it was dead, and they then sucked the juices out of the larvæ and began to clear the comb. A few days afterwards, when they had begun to gather pollen, I enlarged the entrance, and they swarmed again. I happened to find them, and put them back once more confining the queen. She soon began to lay, and they increased quickly; seeing there was every chance of the little community working itself up, and having no further interest in that direction, I thought I would help them, so I added about five

\* The Malay bee (*Apis dorsata*) builds its comb hanging from the branches. *Apis dorsata* is, as it were, at the third great terminus of migration.

hundred bees from another hive; there was very little fighting, and the new-comers soon clustered on to the comb. Next day they all swarmed, leaving only about twenty bees in the hive, and I never saw them again. The few remaining bees set about rearing a new queen from an egg of the last, but they died out before she became perfect.

There is another peculiarity about these bees when throwing a cast: the casts will often leave the hive and cluster, but after about half an hour will return to the hive. At first I naturally supposed it was owing to the queen not having joined them, but as it occurred frequently, often twice in an afternoon, I began to doubt if such were the case, so I examined the cluster and found the queen with it. Thinking they would not then return, I put them into a new hive, and they seemed inclined to stay, as it was already evening; but early next morning they joined the old hive, and swarmed again the next afternoon, when they once more returned. I then put the queen in a bar-framed hive, leaving only sufficient space for the egress of the workers; they however forsook the queen, and she herself made every effort to follow them, rushing about the hive as if distracted and seizing the woodwork in her mandibles. A very few of the workers stayed with her, and one or two from outside joined her, but eventually they too left. This was a virgin queen, but I hope to be able to try the experiment with an old queen leading the first swarm.

I have stated that these bees continue to store honey during the winter months. This is not altogether in accordance with Huber's idea that honey is not to be found during long protracted heat, cold showers or a north wind,\* for the two former conditions are those normal to a winter in the forest in Madagascar, the natural haunt of the bee, and yet honey is stored. In Imerina the winter is as a rule very dry, only a cold drizzle every now and again, barely sufficient to wet the ground. This continues from May to October, yet honey is almost continuously stored. So great is the flow that often large combs are built and filled, yet, curiously, the honey is scarcely palatable, being extremely bitter, probably owing to some winter-flowering shrub, perhaps the *Sèva* (*Buddleia madagascariensis*, L.), or the *Tsiàfakòmby* (*Casalpinia sepiaria*, Roxb.).† It is also very thick, almost gelatinous, and of an oily appearance. I have never yet seen honey at all poisonous in Madagascar, though it varies very much in flavour and in quality, nor have I ever heard of people being at all inconvenienced by eating large quantities of new honey.

\* *Natural History of Bees*, by F. Huber; Translator's preface, p. xviii.

† The peach honey, gathered about the same time, has a bitter flavour.

As regards the bees themselves, they differ slightly in size, according to the age of the comb in which they were reared; those from old combs are smaller, owing to the cells being partially filled up by the old silk cocoons left in them. I have sometimes wondered if it were possible to increase the size of the workers by *very gradually* increasing the size of the foundation cells given to them.

I have sometimes fancied that I have noticed a difference in colour among the bees, but I imagine it is only from the difference in size, the larger naturally looking lighter. I have also carefully examined bees from different places on the coast, and from the central provinces, but can detect no difference whatever either in size or colouring.

These bees work all weathers. In England a cloud passing over will often send all the bees in the fields hurrying home; whereas the Malagasy bee will take no notice, even should rain begin to fall. This is noticed among the different varieties now established in England: the Cyprian bee being extremely cautious about flying in heavy winds, yet both it and the Italian bee work earlier and later than the English one. But it is marvellous in what weather the Malagasy bee will continue to work. I have seen them both entering and *leaving* the hive during a heavy thunder-storm, when I should have thought it impossible for them to fly twenty yards without being beaten down, the wind at the same time being very strong. Any ordinary rain seems not to affect them in the least, and I have seen them rushing in and out of their hives—what the natives call ‘playing’—a habit they have when breeding freely, during the heaviest rain. When the day is rainy and the bees heavily laden, they often fall near the hive, but are seldom if ever chilled, as in England, but after resting a short time they reach the hive.

I have several reasons for thinking that the death-rate among these bees is not so great as among the English. Many trustworthy writers in England state that the average life of a worker during the summer months is from about six to eight weeks—in winter, as there is no work to be done, it is much longer—yet several colonies which I have left queenless during the height of summer have usually lasted from four to six months. Again, they seem to diminish much less rapidly than the English when the breeding stops; however, as I have stated, this is seldom the case, and naturally there is not so much work done in a queenless hive as in one with a fertile queen.

The *enemies* of the Malagasy bee are not so numerous as in other countries, especially tropical countries, and what there are are common to the English. I have never heard of any bird



enemies, or of any indigenous mammal that attacks them; though no doubt there may be, if more were known of the forest mammalia. The Norwegian brown rat, which is fast spreading over the island and driving the light-grey native rat before it, is very destructive to bees, eating through the native wooden hive and stealing the comb. Insects however are their chief enemies.

The wax-moth may generally be seen in the neighbourhood of the hive, into which it dodges, with remarkable skill and presence of mind, past the sentry bees, who, as soon as they have recovered from their astonishment, turn and chase the intruder. But when once in, it is not easily dislodged, running swiftly about the sides of the hive until it finds some shelter, and, as opportunity offers, laying its eggs among the *débris*. Here they hatch out, and the grub, protecting itself with a silken cocoon in the form of a pipe, eats its way through comb and brood with impunity. They however do little or no harm in a strong colony, confining themselves, or rather, being confined by the bees, to the *débris* alone. Possibly they may even do good, for they eat up the particles of wax that are too small for the bees to clear away. Weak or queenless hives they destroy in a very short time. I have never seen a hive without them.

Ants again are more troublesome, perhaps, than dangerous. They hang about the hives, forming their nests in or about the sides, or under the bark that is used as a shelter, and do the work of scavengers. Any bee which is sick unto death will of its own accord leave the hive, to be immediately seized upon by the ants. Bees are very cleanly insects; they do not allow a dead body to remain in the hive, and as a rule carry them to a considerable distance before they drop them; yet during the massacre of the drones, there are many left near the hive, for they are too heavy and large to carry away; so in cases of that sort the ant is a help, but it likes honey immensely and is always trying to thieve; to prevent this the bees have recourse to a very ingenious method. As soon as an ant—it is only the small species that rob—appears on the alighting board, a sentry bee runs up to it. The ant is too small and nimble to be seized by the bee's mandibles; so by turning its head and raising its abdomen, the bee brings its wings into a proper position, and with one buzz and a sharp twist round to the right, the ant is sent flying into space. Should there be many, the process is repeated, first to the right, then to the left, and so on, until the board is cleared.

The greatest enemy of all is the death's-head moth, *Sphinx atropos*, which is very common. In the evening, should you

watch a hive, you will soon hear a sound as of distant thunder and then a rush. A huge moth hovers for a second over the hive and alights. Without fear or hesitation he pushes his way to the entrance. If the bees are strong and not accustomed to being robbed, they will give battle, crowding on to the moth's back in a mass, and striving to lay hold of his slippery fur or sharp-spined legs. With one flutter of his large wings he sends his despised opponents hither and thither and slowly enters. The guards have no power to stop his huge frame, for sting they cannot, they can get no grip, and their stings cannot pierce that tough soft skin, but merely slip along it harmlessly. As soon as he is within, he keeps his wings vibrating with a low humming noise, and leisurely sucks his fill—a very big fill. Then he rests lazily, hanging from one of the combs, utterly heedless of the weight of bees that cluster over him. The bees too have learnt their powerlessness and attempt no more to dislodge him. How long he stays I know not; sometimes a fortnight, and sometimes only a short time, but the damage he does is immense, and in any other climate would be fatal. I have known a hive sucked dry during six months of summer weather, and not so much as a drop of honey to be found in it, although a very strong colony, and upwards of two hundred bees a minute leaving and returning. All this immense harvest has been taken day after day. From that hive alone I took ten moths in one fortnight. I left them to test Huber's words, where he says that the bees themselves will close the entrance. Mine did not; they closed a few places, but obstinately left a large one open, and when I closed it for them with wax, they opened it again. This hive had quite given up resisting, and the moths walked in and out as if the place belonged to them, but I often took a moth from it and placed it on the alighting board of another hive, and in ten seconds it was one black mass of bees, sometimes more than a thousand bees at once clustered upon it, but they could never kill it. I killed one and put it on the board; this they tore to pieces, as of course it could not vibrate its wings, but though so many bees were trying to sting it, not a sting entered until it was torn piecemeal. I repeated this experiment often, but with the same result, no sting piercing the intact skin.

Another thing I noticed was, that the moth never used its peculiar squeaking noise to effect an entrance. It has been repeatedly affirmed by European writers\* that the noise of this moth enables it to subdue the bees; and the reason given is, that it is the same noise as that made by the queen-bee when approaching the queen-cells with the intention of destroying

\* Huber, preface; *Circle of the Sciences*, p. 144.

them. As long as she is silent, the bees prevent her doing so, but directly she emits the noise, they all give way, putting their heads down and remaining as if paralyzed. Now though the noise to human ears seems the same, yet I have no hesitation in saying that the bees recognize the difference, and pay no respect to the moth when emitting the sound; if there is any difference, they attack it with greater force. I have tried over and over again, and have watched very many moths, both when entering the hive and when actually inside, and in no one case did I hear the sound emitted, but the moth evidently knew that the bees were powerless to hinder it. However, wishing to know if the bees could be subdued by the noise, I caught a moth and held it gently between my finger and thumb, thrusting it among the bees. As is its custom, it began squeaking under the restraint; but the bees flew to the attack and crowded on to it, quite disregarding my hand, but intent on the moth. I then took another and made it squeak on the alighting board; the bees at once rushed out to give battle. These experiments I have repeated at least a score of times, with the same results. In every case, as soon as the moth was released from my fingers, it stopped the squeaking, although it was still surrounded by the bees.

The queen-bee and the *Sphinx atropos* are not the only insects which emit the same sound; there is another Malagasy *Sphinx* which does it, and also a hymenopterous wingless insect very common here. The reason for it, or the means by which they do it, are, I believe, still unknown. The larva of the *Sphinx atropos* emits a similar noise, but yet slightly different. When doing so it sits in the position which gives rise to its name of *Sphinx*, with its head raised, and works its anterior pair of prolegs, as if mandibles. I have on several occasions found old battered specimens of the moth dead in the hive, but whether killed by the bees, or whether having died from natural causes, I do not know.

There is another thing perhaps worth mentioning about this moth, and that is, its larvæ feed for the most part on the potato plant, both here and in Europe. Now considering that the potato is an introduced plant in both places, it is very curious that such exclusive feeders as the larvæ of moths should change their diet—and that too in widely different regions—to a non-indigenous plant. The native plant they feed on is a vetch, and as different to the potato as one can well imagine, both as to appearance and the texture of the leaf; yet one finds only about one in ten on the native plant. I have tried them on tomato and on many of the native nightshades, but they prefer dying to eating what is evidently unclean to them. I have

heard people, who ought to know better, say that the larvæ of butterflies and moths eat the leaves of the shrub on which the perfect insect laid its eggs, and once having begun on that, will not change. The absurdity of such a statement is obvious to any one who has bred caterpillars to any great extent, or who has watched the habits of the imago. Besides, why should the moth choose the potato? While I am digressing I might add that another *Sphinx* caterpillar feeds on arum, fuschia, vine and balsam, and refuses all else, the native wild-balsam being its indigenous food.

Another caterpillar of a *Bombyx* feeds on the Eucalyptus (red), geranium, and a native shrub, and nothing else, and will readily change from one to the other. What is there in common between such dissimilar plants? There is a great field open for investigation here, and one in which, after three years' careful study, I have myself made no progress. Some moths will lay their eggs on a wall near which at least ten different kinds of plants grow, all equally remote from the eggs. As soon as the young are hatched, instinct leads them to one, and one only, of these ten bushes. I have taken the eggs and put them so that there was no plant on which they commonly fed near. The young when hatched wandered helplessly about and perished. There are many caterpillars which will eat anything, more especially the hairy kinds, but very many are most exclusive. (The readers of this paper must excuse the digression.)

The other enemies of the bee that I have noticed, are a parasitic solitary wasp, which lays its eggs in the hive; and another, which seizes the bees returning to the hive for the sake of their laden honey-bag. It kills the bees with wonderful celerity.

I have also found a parasite of small dimensions on the drones, and sent a description of it to T. W. Cowan, Esq., who informs me that it is different to any he has noticed on the European bees.

A few further particulars about native bee culture may be of interest. The hives the Malagasy use are hollowed tree trunks, much the same as those employed in many other countries. A rough plug of wood is inserted in either end, through the interstices of which the bees find entrance and exit. Some natives fix a piece of comb by means of a split bamboo in new hives, so as to induce the bees to build at right angles to the trunk; the combs containing honey can then be got at more readily without destroying the brood, which is usually in the centre combs. The natives, when taking the honey, open one end, and holding a piece of burning rag, blow the smoke gently in, this drives the bees to the further end, when the combs can be

cut out without fear. Then, going to the other end, they do the same, leaving the centre combs untouched.

I have already stated their method of increasing the stock. They have a good general idea of the economy of the hive, and of the habits of the bees. They usually find the wild nests by watching the flight of the laden bees, and then by listening during the hot part of the day, when the bees are 'playing.' There are only two villages that I know of where bees are kept to a large extent; at most other places the people know of a certain number of wild nests, over which they keep supervision.

When the honey is taken they pound up the comb, honey and pollen all together, placing it in gourds, and then take it to the market. In many places they make large quantities of mead, more especially when the rite of circumcision is being observed.

C. P. CORY.



## THE NAMES AND GEOGRAPHY OF MADAGASCAR:

AS DESCRIBED BY CLASSIC AUTHORS, BY MEDIEVAL GEOGRAPHERS,  
AND BY MODERN EXPLORERS.\*

### I.—IN ANCIENT TIMES.

THE ancients were acquainted with only a small portion of the surface of the globe; indeed they had but vague and imperfect notions of the greater part of those countries which were inclosed within the narrow limits outside which they dared not venture to go. In the time of Strabo, that is to say, about the beginning of the Christian Era, they knew nothing of the eastern coast of Africa to the south of Cape Guardafui (*Aromatum Promontorium*).† Not long after that however, this cape was passed by two navigators, Theophilus and Diogenes, who

\* This article is translated, by the kind permission of the author, from M. Grandidier's great work on Madagascar still in progress, and forms, in the original French, the text of the first part of the first volume of the work, viz. that treating of the Geography of Madagascar, and that division of it which discusses its "Historical Geography." The greater portion of this paper is a translation, almost word for word, with a few unimportant exceptions, of the text of the chapter, but in the later portion I have condensed it in several places. I have not however, except here and there, given M. Grandidier's notes, which are very full and minute, especially in the details they give of modern maps and explorations, for in many instances the text occupies only two or three lines of the page. Space could not be spared in our pages for these minute particulars, nor are they essential to a clear understanding of the progress and advance of our geographical knowledge of this island.

† Greek authors speak of an island situated on the east coast of Africa to which they give, after a certain Timosthenus, the name of *Cerne*, the same by which they designate the furthest island reached by Hanno on the western coast, and which in Carthaginian means 'the end.' But it is impossible to know to which of the different African islands this name belongs. No data allow us any longer to believe that this is the island of *Phebol*, which Aristotle places in the Indian Ocean, and which Malte-Brun tried to identify with the island *Phanbalon* or *Kanbalon* of the Arabs, an island which, according to this geographer, is Madagascar, but which we believe rather to be one of the Comoros,

nived at a port to which they gave the name of *Rhapta*; and shortly afterwards it was also passed by the pilot Dioscorus, who went as far as cape situated still farther, which he called *Prasum*. The discoveries of these navigators, described by MARINUS OF TYRE in a work which has unfortunately not come down to us, have been handed down through a confusion of them by Ptolemy (IIInd cent., A.D.).

It was not far from this Cape Prasum that was situated the island designated under name of *Menuthias* or *Menouthesias* by the celebrated Greek geographer ARRIAN, the author of the *Periplus of the Erythrean* (or Indian Ocean), and later on, in the IVth century, also by MARCIAN HERACLEUM. Is this island—the only one of the neighbouring archipelago of the *Pyralaoi* which these authors cite in this part of the world—is this that which we now call Madagascar?\*. Is it, on the contrary, Mafia, Zanzibar,† Pemba, or even the position where one should fix Madagascar or Mukdeesha, as certain authors have thought?‡ This question, which has been much discussed, is not yet settled.

In examining these authorities we see that the island of Menuthias, or rather, the port which was touched by the first ships coming from the east, is placed by PTOLEMY 300 miles to the north-east of Cape Prasum, and consequently, on account of the direction towards the north-east which he gives to this part of the coast, more than 700 miles from Cape Rhaptum. Arrian, who had more correct notions as to the line of southern Africa, places it only at two days' and nights' sailing, or about 200 to 250 miles from this same Cape Rhaptum. Marcian of Heracleum says that it is placed not far from Cape Prasum. It is necessary then for us first to search for some promontories on the east coast of Africa corresponding to the Capes Rhaptum and Prasum of the Greek geographers.

Marinus of Tyre places Cape Prasum under the parallel of the Tropic of Capricorn. Ptolemy, although he had received no new information, gives the position of Cape Rhaptum as  $8^{\circ}25''$  S. lat., and  $73^{\circ}50'$  E. long., and of Cape Prasum as  $15^{\circ}$  S. lat., and  $80^{\circ}$  E. long., that is to say, he moves this last point 8 degrees further north.

Upon what data have these two geographers based their opinions respectively? Solely upon the number of days which Diogenes, Theophilus and Dioscorus have given for going from Cape Guardafui either to Cape Rhaptum or Cape Prasum; for at that time no position on the eastern coast of Africa had been determined astronomically, and neither a compass nor the log were used. According to Marinus of Tyre, the navigator Diogenes, driven by a northerly wind, spent 28 days in going from the neighbourhood of Cape Guardafui to near Cape Rhaptum; and Theophilus, favoured by a southerly wind, made the reverse voyage in 20 days. So says Arrian. The merchants whom Ptolemy questioned only reckoned 15 days as the ordinary time for travelling between these two points.

Knowing the estimates after which Ptolemy had fixed the geographical positions of the two African capes and Menuthias, and which, as we have already shown, vary from fifteen to twenty-five days for the time of the

\* So thought Mercator, Megiserus, Coronelli, Bochart, and Rochon.

† So d'Anville, Vossius, Codrington, Guillaumin and Ch. Müller.

‡ So Gosselin.

great work of EDRISI, the *Noshat al-Moschtak*, precise details about the East African islands. He, who, as is known, lived a long time in Sicily, and collected at the request of that prince valuable respecting the different countries of the globe planisphere which was engraved on a tablet there is a copy in one of the manuscripts in the . In this the outlines of even the best known, ve, a circumstance that will hardly surprise us, ives and windings must have greatly disturbed ple who navigated without compass or quadrant. Numerous islands which he has shown in the Indian which certainly represents the Comoros, and the name of *islands of Zanedj*. Masudi had his name, which he writes *Zabedj*, to denote the according to Edrisi, this name was hardly applicable ds of the extreme East; but it is easy to under- been led to confound under the same name islands the East Indies on the one side, and Madagascar the other, or rather, to consider them all as form- hipelago. Imbued with the ideas which Ptolemy he has, on his silver planisphere, prolonged the ards towards the confines of Oceania, so that he an a vast Mediterranean! One sees in fact that of Sofala directly to the south of Ceylon (*Serendib*) and Maldive groups (*El-Roibahat*); and while we find the island of Sumatra—which he confounds Malacca and the island of Java, to the west, not Zanguebar, is a group of islands, one of which n 1200 miles in circumference. But let us hear

coast are the islands of Zanedj, which are numerous n, *Chezbezat*, has a circumference of 1200 miles; sugar-cane, camphor-trees, and spices. *Andjiyah*, has for its capital a town which the Zendjes is distant 100 miles from El-Banes, the last town of miles in circuit, and the people live principally upon re are five kinds. Here there is a mountain called of which some robbers have made a fortified retreat, e to pillage the outskirts of the town. El-Andjiyah is many villages and numerous cattle; there rice is trade is carried on. It appears that when China was evolutions, and the governments of India became too moved their commerce to Zanedj (Java), and entered with the dependant islands, having had no reason to good-will, the gentleness of their manners, and their from this cause the island is well peopled and so eigners.

another of less extent, where is prominent a high and sides are inapproachable, because it burns all in it proceeds thick smoke during the day and flames as foot are springs, some of cold and fresh water,

passage from Guardafui to Cape Rhaps, it should not be difficult for us to estimate the distance between these two points in a more exact manner than the Greek geographer was able to do. Ptolemy, in fact, did not know well either the configuration or the bearing of the east coast of Africa; and he had no idea of the range of the winds and the currents in that region, nor of the practices of the local navigators. These facts are, on the contrary, familiar to us. We know that from Cape Guardafui to the Mozambique Channel there blow, from April to September, regular and strong winds from the south-east; and that during the other months, especially in December and January, it is, on the contrary, the north-east monsoon which prevails with great force. We know that the currents, notwithstanding great complexity, have almost always, along the coast, the same direction as the prevailing winds, and that they there attain a mean speed of a mile and a half, sometimes of two, three, and even four miles, an hour. There is then no need, as Ptolemy supposed, to take into account the changes in the force and direction of the wind—which he mistakenly thought to be frequent under the equator—in estimating the duration of a voyage along the east coast of Africa, since boats or dhows, with the wind generally astern during the monsoons, need fear no deviation from their course. In former times these dhows, like those of the present day (which they exactly resemble), had all the qualities required both in construction and rig to sail well with a stern wind in the open sea. They were only navigated under these favourable conditions, and they were vessels of remarkable speed; so that there is certainly no exaggeration in allowing that their mean rate of progress was at least from five to six miles an hour during the day, and from three or four miles during the night, especially if one remembers the powerful action of the currents, which, let it be specially noted, is added to that of the monsoons. These facts were unknown to Ptolemy, so his discussion of this subject rests on no sound basis.

From what we have said of the methods of navigation among the ancients, and the prevailing winds and currents on the East African coast, there is no doubt that the estimate of 100 marine miles in one day's sailing is under the truth. We shall find then, in taking as the basis of our estimate the mean number of days' voyage between Capes Guardafui and Rhaps, say twenty days, a distance of about 2000 miles between these two points; and allowing for the westward trend of this part of the coast, a difference of latitude of from 27 to 28 degrees; and Guardafui being in 12° N. lat., Cape Rhaps would be situated in about 15° or 16° S. lat. and would be one of the capes near Mozambique; and Cape Prasum, which Ptolemy places six degrees further south, would be one of the headlands near the mouths of the Zambesi.

Now, according to Ptolemy, Menuthias is situated five degrees to the north-east of Cape Prasum. Arrian says that it took two days' sailing to go from Cape Rhaps to that island, and he adds that it was almost the same distance from a group of islands which he call *Pyralaioi*. As for Marcian, who only reproduces in brief that which Ptolemy had written two centuries previously, he contents himself with saying that it is not far from Cape Prasum.

What then is this island, which is at once near Cape Prasum, distant from Cape Rhaps, like the *Pyralaioi* Islands, two days' sail, and



situated at a little further distance from Serapion (the mouth of the Lufidji or Quiloo) than these Pyralaoi, if it is not Madagascar? and are not these Pyralaoi the Comoros? The root *pur*, which forms the first part of their name, plainly indicates that they were volcanic; and it is well known that Great Comoro possesses a volcano which is still active. Besides, one hardly sees what that sea strewn with rocks, of which Ptolemy speaks, and that channel, which, according to Arrian, washes Menuthias, and where the islands Pyralaoi are found, could be, if not the Mozambique Channel, with its islets and numerous banks. For, up to Cape Delagado, coral reefs are hardly found except along this same part of the African coast, at a very short distance from the shore. Besides, let us listen to what Arrian says about the island of Menuthias:

“Setting out from the Pyralaoi Islands, a little beyond Africa, at two days’ and two nights’ sail towards the setting sun, the island of Menuthias is found, distant from the land about 300 stadia, a low island and altogether covered with trees, in which there are rivers, various species of birds, and land-tortoises. The only fierce animals are crocodiles, which however do not injure man. There are canoes of planks tied together, and others made of a single piece of timber, which the inhabitants use to go and catch the sea-turtles, which they take in a special way by means of osier baskets placed along the shore at the entrances to their submarine caves.”

This description applies perfectly to the island of Madagascar, and *only* applies to it among all those which are found along the coast of Africa; for we cannot allow its inapplicability because of the obscure phrase at the beginning of the sentence, where it is said that this island is situated at about “300 stadia from the land,” and “towards the setting sun,” i.e. to the west of the Pyralaoi islands; this phrase is incomprehensible in any case, and is in complete discord with Ptolemy’s description. There is evidently an error either of editing or in the copying; but the rest of the description is exact in every point.

In fact, from the western side, Madagascar does appear as low land, covered with trees and bush, cut up by numerous rivers; the crocodile is the only ferocious animal found there; the land-tortoises are of great size and abundance, and they are up to the present day an important article of commerce with the islands of Réunion and Mauritius, where they are in much request for the table; in no other part of the African seas is turtle fishing practised,\* and at certain points of the southern coast, this fishing is still carried on by means of large baskets. Lastly, some canoes are made of planks sewn together with vegetable fibres, and others, hollowed out of a tree trunk, have been in use there from time immemorial.

This description, which so well suits Madagascar, would not, on the contrary, apply either to the Comoros, high and mountainous islands, or to any of the three principal islands on the East African coast, Pemba, Zanzibar and Monfia, because they have neither rivers, nor land-tortoises, nor crocodiles; and besides, it would not have been noted as extraordinary that in such small islands there was an absence of ferocious animals except crocodiles.

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\* See ANNUAL VII. pp. 48-49.

## II.—IN THE MEDIEVAL PERIOD.

1.—*Arabian Geographers and Navigators.*—The outline of the coasts of Africa given by all the geographers of the Middle Ages proves that they were, up to the XVIth century, ignorant of the true positions of the Eastern seas and countries. The Arabs however collected more complete and exact information than did the ancients about these regions. The Greeks and Romans did not in fact know or describe in any detail the provinces included in their own empires; among the Arabs, on the contrary, who, impelled by fanaticism, undertook after the death of Mohammed the religious conquest of the world, geography took a much wider range; and although there is much confusion in the descriptions which they have left of the different countries of Asia and Africa where they preached the doctrines of their Prophet, these bear witness to real progress.

Up to the Xth century, Arabian authors joined together Africa and Asia, making the Nile communicate with the Indus. But in 947, MASUDI, in his book *Moroudj ad-Dhahab* ('The Golden Meadows'), gives some interesting details about the eastern coast of Africa; he speaks of a channel or arm of the sea, known to the sailors of Oman and Siraf under the name of *Berberi*, or rather, the 'Sea of the countries of Berbera and Djafouna,' a channel 500 miles long and 100 miles broad, at the extremity of which are situated, after Zanzibar, Sofala and Wakwak; and where is to be found, among other islands, at a distance of one to two days' sail from the coast of the Zendje country, the island of *Kanbalou*. Many writers have thought that Kanbalou was no other than Madagascar; if however one notices that this island, according the same description given by Masudi—who speaks of it from experience on account of his having visited it in 916—is placed in the middle of the channel of Berberi, that it was inhabited by the Zendje, and that it had been conquered about 750 A.D. by the Mohammedans, that these Mohammedans had adopted the Zendje language, and that the king belonged to their tribe, lastly, that the cocoa-nut palm was found there—it does not seem possible that the author described under this name the great island of Madagascar, which is at least two days' sail from the African coast, which has never had Mohammedan kings, where the Suahili or Zendje language is not spoken, and where the cocoa-nut palm has only been introduced recently, and is still somewhat scarce. It is more probable that Kanbalou is one of the Comoros, perhaps Anjouan (or Johanna), which, from the most remote times, has been a resort of Arab pirates; and that Madagascar is the country of *Djafouna*, which, with that of Berbera, bounded the Berberi or Mozambique Channel.

In the same century, two other Arabian geographers, AL-ISTAKHRI and IBN HAUQAL, constructed planispheres showing the earth with its continents and seas, as they were then supposed to be arranged; but if it is not easy to determine what the island is which they have figured in the Indian Ocean under the name of *Owal*, beyond the country of Habaschah (East Africa), there is no doubt that it is *not* Madagascar; they say in fact that they do not trouble themselves with the lands of the black races, because these are destitute of that which constitutes a state, viz., laws, religion, and regular government. Their maps also show no island between Zanguebar and India.

We must come to the great work of EDRISI, the *Noshat al-Moschtak*, (1153) to find some more precise details about the East African islands. This celebrated geographer, who, as is known, lived a long time in Sicily at the court of King Roger, and collected at the request of that prince all the information available respecting the different countries of the world, constructed a large planisphere which was engraved on a tablet of silver, and of which there is a copy in one of the manuscripts in the Bibliothèque Nationale. In this the outlines of even the best known coasts are very defective, a circumstance that will hardly surprise us, since their frequent curves and windings must have greatly disturbed the calculations of people who navigated without compass or quadrant. However, among the numerous islands which he has shown in the Indian Ocean, there is a group which certainly represents the Comoros, and which he designates by the name of *islands of Zanedj*. Masudi had already made use of this name, which he writes *Zabedj*, to denote the island of Java; and, according to Edrisi, this name was hardly applicable to any except the islands of the extreme East; but it is easy to understand how Edrisi has been led to confound under the same name islands so widely separated as the East Indies on the one side, and Madagascar and the Comoros on the other, or rather, to consider them all as forming part of one vast archipelago. Imbued with the ideas which Ptolemy had previously held, he has, on his silver planisphere, prolonged the African continent eastwards towards the confines of Oceania, so that he makes the Indian Ocean a vast Mediterranean! One sees in fact that he places the country of Sofala directly to the south of Ceylon (*Serendib*) and of the Laccadive and Maldive groups (*El-Roibahat*); and while only a little to the east we find the island of Sumatra—which he confounds with the peninsula of Malacca and the island of Java, to the west, not far from the coast of Zanguebar, is a group of islands, one of which measures not less than 1200 miles in circumference. But let us hear Edrisi's own words:

"Opposite the Zendje coast are the islands of Zanedj, which are numerous and large. One of them, *Chezbezat*, has a circumference of 1200 miles; here are found pearls, sugar-cane, camphor-trees, and spices.

"Another one, *El-Andjijah*, has for its capital a town which the Zendjes call *El-Anfoudja*, and is distant 100 miles from El-Banes, the last town of Zanguebar. It is 400 miles in circuit, and the people live principally upon bananas, of which there are five kinds. Here there is a mountain called *Wabra*, at the summit of which some robbers have made a fortified retreat, from which they emerge to pillage the outskirts of the town. El-Andjijah is very populous; it has many villages and numerous cattle; there rice is cultivated, and a large trade is carried on. It appears that when China was troubled by incessant revolutions, and the governments of India became too tyrannical, the Chinese moved their commerce to Zanedj (Java), and entered into settled intercourse with the dependant islands, having had no reason to doubt their honesty and good-will, the gentleness of their manners, and their aptness for business. From this cause the island is well peopled and so is much frequented by foreigners.

"Next to this island is another of less extent, where is prominent a high mountain whose summit and sides are inaccessible, because it burns all that comes near it. From it proceeds thick smoke during the day and flames during the night. At its foot are springs, some of cold and fresh water, others hot and saline.

"A little further still is the island of *Kermoda*, whose inhabitants are black ; they are called *Nerhin* ; they wear a mantle called *azar*, and cotton drawers called *fouta*. They are daring, brave, and always go armed ; they frequently embark on the sea to attack and pillage merchant ships. They do not allow strangers to penetrate into their country, and they fear no enemy. It requires a full day's sailing to go from the coast of Zanguebar to Kermoda, and half a day to go from this island to El-Anfoudja."

According to the descriptions which we have here transcribed in all their detail, and according to the chart in the Asselin manuscript, what can these islands be if not Madagascar and the Comoros ? It follows in fact, from putting together the notions which Edrisi has published in his *Nozhat al-Moschtak*, with the arrangement which he has shown of the islands of the Indian Ocean on his planisphere, that this geographer, combining the accounts of the Arab sailors who went to the islands along the African coast, and of those who went to the Sunda Islands beyond India, believed that these two groups of islands were joined together and formed one and the same archipelago, to which he gives the general name of *Zanedj*. From this came a confusion which seems odd to us ; but, although other Arab geographers rightly divided the islands of the Indian Ocean into those of the Zendje or African islands, and those of *Zanedj* or islands of the further East, it is not less certain that, according to his treatise, as well as from the maps accompanying it, the islands to which Edrisi applied the name of *Zanedj* are situated at a short distance from the East African coast. Further, it will not be difficult for us to find the modern names of these islands if we remember that in the group is one with a burning mountain (*Djebel Ennar*). In fact Angasiza or Great Comoro, in one direction, and the island of Réunion, in another, are the only ones in these regions possessing a volcano ; and there seems no doubt that it is the *first* of these which is mentioned in the *Nozhat al-Moschtak*. The second, from its distance from the group, and its isolated position in the open ocean, was certainly unknown to the geographers of the Middle Ages ; and in any case it does not correspond with the description Edrisi has given.

This identification of the island having a volcano with Great Comoro once admitted, we find Anjouan (Johanna) in the island Andjiyah. It is mountainous, corresponding with Edrisi's description ; while Zanzibar, with which most authors have confused it, has no mountain which could serve as a refuge for brigands. Besides, as Edrisi says, Anjouan has for long been under Mohammedan sovereigns ; it produce bananas of various kinds ; rice grows well there ; cattle has always been abundant ; and it has always carried on a considerable trade. It is true that it is more than 100 miles from the mainland, and that it is much less than 400 miles in circumference ; but these errors of distance and dimensions are so frequent in ancient treatises on geography, that they need not trouble us in view of the other reasons which lead us to identify Anjouan with Andjiyah ; especially since there is no island in the neighbourhood which better corresponds to the description in these two particulars.

As for *Chesbezat*, to which Edrisi gives 1200 miles of circuit, and where he places pearl fisheries, sugar-cane, camphor-trees and spices, it appears certain that it is Madagascar. For there is no doubt that this circumference of 1200 miles, like that of the 400 miles he ascribes to

Anjouan, rests on no certain data; and the sailors or merchants who furnished this information have, in our opinion, wished simply to show that the one island was much larger than the other.

If then we leave on one side the question of the actual extent of the two islands, a question to which Edrisi appears not to have attached much importance—since on his map he has not preserved the same proportions he gives in the text—we see that Madagascar, by its size and its position with respect to the Comoros, is the only one in these regions to which the description given of Chezbezat could be applied; for there, from ancient times, there have been pearl fisheries, and the sugar-cane is common. By camphor-trees he must have meant gum-bearing trees, like that yielding copal, etc., for camphor is only found in the further East; and by spices, sandal-wood, the *ravintsara*, and other trees.

As for the little island of Kermoda, it seems to us, from a slight similarity in the names, that it is probably what is now called Mohilla. This Comoro island, like the others, had long been a resort of pirates; and there is no great difference between its real distance from the continent and that which Edrisi indicates.

In the XIIIth century, a certain IBN-FATHIMA published an account of his voyage to Sofala along the East African coast. Unfortunately, IBN-SAYD, who has handed down the name of this sailor in his abridgement of the *Nozhat al-Moshtak*, does not give any noteworthy details on the subject; and far from furnishing any new information about these regions, he makes more erroneous the notions which Edrisi had held, describing the Comoros, Madagascar, Java, and Sumatra as one and the same island, which he calls *Komr* or *Malay*, and which he places to the south of Ceylon! The mountain *El-Nedama* (Cape Corrientes), which is situated south of Sofala, in a desert and uninhabited region, forms, according to this author, the limit of the *Komr* (or Mozambique) Channel; and from thence begins the Sea of Tempests, where ships are afraid to venture.

One of Ibn-Sayd's contemporaries, KAZOUINI, who wrote a treatise on geography, the *Athar al-Bilad*, or 'Memorials of various Countries,' adds nothing more to our knowledge of the African islands; he has simply repeated what had been said by his predecessors.

ABD EL-MAOL, the author of a book intitled, *The Size of the Earth*, gives to all the islands of the Ethiopian sea the names of the *Raneg' islands*; one of them, he says, emits fire, and the largest is called *Serendah*. It is probable that this last is no other than the island of Chezbezat (Madagascar), of which we have already spoken; but there is such confusion and vagueness in all these descriptions that they add nothing to what Edrisi tells us.

BAKOUI, in his *Description of the most Remarkable Things* (A.D. 1403), calls Java *Djesiret el-Zanedj*, like all the Arabian authors we have been able to consult except Edrisi and Abd el-Maol; and the largest island situated in the Zendje sea he calls *El-Komr*. He transposes the names given to these islands by Edrisi.

Here terminates our review of those medieval Arabian geographers and travellers who have spoken of Madagascar. We see that for the countries and islands of East Africa they do hardly more than repeat

what Edrisi had said before them in fuller detail and more accurately. Even in 1557, when our knowledge of the world had in Europe suddenly made great advances, and one after another appeared the globe of Martin Behaim, the maps of the world of Juan de la Cosa, of Pilestrina, of Henry II., of Sebastian Cabot, of Mercator and many others, we find one of the most celebrated Arabian geographers, Mohammed ben Aly ben Ahmed-al-Sharfy el-Ssfaqi, reproducing, not improving, but deteriorating, the map of Edrisi.

2.—*European Geographers*.—The few planispheres and maps of the world which the medieval European geographers have bequeathed to us show, that up to the end of the XVth century they copied Edrisi with a few variations of small importance, but also with unfortunate alterations which spoiled the better informed work of their predecessor. It is then not surprising that when they show Madagascar at all on their maps, it is not easy to trace it in the midst of a chaos of countries and islands which have been marked almost at random. R. DE HALDINGHAM, on the map of the world which was intended in 1300 for Hereford Cathedral, seems however to have represented this island under the name of *Malichu*. What indeed can be that great African island, situated to the south-east of the continent, opposite to a lake from which one of the two rivers Nile issues, and nearer to the island of Madeira than to Ceylon, if not Madagascar? At that period, it was in fact already supposed that Africa was surrounded on all sides by water; and the Cape of Good Hope not having yet been doubled, it was natural that geographers, in the absence of astronomical observations, should place together the islands known both on the east and to the west of the continent, since these were the furthest points reached by navigators, whether European or Arabian. So that the isle of Circinice, which must be identified with the Cape de Verde group, is placed not far from Malichu.

In the manuscript of the *Polychronicon* of RANULPHUS HYJGEDEN (XIVth century) which is in the British Museum, there is a planisphere where this same island of Malichu (*Malic Insula*) is shown; but it is simply an abridged copy of the preceding.

On the map of the world by MARINO SANUTO (1321), we find a certain number of islands scattered hap-hazard over the Indo-African Gulf; but it is impossible to identify any of them either with Madagascar, or with the Comoros, or in fact with anything else.

In FRA MAURO'S map of the world (1459), the most southern island of the Indian Ocean is *Mahal*, which is evidently the Malichu of Haldingham, and consequently probably Madagascar. But instead of giving, like his predecessor, simple notions of distance, he confounds it with the Schoria (Socotra) of Marco Polo, and says that it is inhabited by Christians under the authority of an archbishop! On this map is shown the country of *Macdasur*, to the south of Sofala, but which, notwithstanding its erroneous position, is most likely the state of Magadoza.

One author alone at this epoch gives the name of *Madagascar*. This is MARCO POLO, whom his travels into the far East have justly made renowned; but there is no doubt that in his description he has confused the island to which we now give this name with the country of Magadoza or Mukdeesha, to which alone his description applies. In fact, in the XIIIth century, in accordance with the account he gives of Madagascar,

Magadoza was governed by a sheykh, like the neighbouring towns of Lamo, Melinda and Mombasa; the people there eat camels' flesh; there one can obtain hippopotamus' teeth in abundance; asses and giraffes, and ferocious animals like panthers and lions, have always been common there; commerce in silk stuffs and cloth of gold is there carried on; besides, its position to the north of the island, or rather the country, of Zanzibar, is just that indicated by Marco Polo. Even in the name itself, written according to the different earliest editions, *Madeigascar*, *Madeigascat*, *Madagastar*, *Mandeschar*, *Mandesgascar*, *Magastar*, recalls the name, slightly modified, of *Magdechou*, *Magdachaou*, *Magdachou*, our modern Magadoza, which, in the XIIIth and XIVth centuries, was the most important and celebrated in the Zendje country, and whose sheykh exercised a kind of sovereignty over a large part of the coast.

As for the "*ruc* or griffon, which appears at certain seasons from beyond this country, and which resembles an enormous eagle, whose wings cover a space of thirty paces, whose feathers are twelve paces long, which can seize an elephant in its talons and carry it to a distance," and which an eye-witness, Ibn Batuta, compares "to a mountain rising into the air," that is certainly the personification of a hurricane or a cyclone, so common in the Indian seas.\* In truth, in all the otherwise very circumstantial description which Marco Polo has given of Madagascar, there is nothing which belongs to the *island* to which we now give this name, and which he certainly never had in view in his account. Besides, the order which he has followed in his narrative plainly indicates that he spoke of a *country* situated to the north of Zanguebar.

### III.—IN MODERN TIMES.

The most ancient geographical document where the island of Madagascar is found indicated by its modern name, is the globe of MARTIN BEHAIM (1492). This author, wrongly interpreting the accounts of Marco Polo, who had described as *islands*, as we have said, the *countries* of Madeigascar or Magastar (Magadoza) and of Zanzibar (Zanguebar), has marked under this name, near a vast promontory of the eastern coast of Africa, and to the *north* of Zanzibar, a great triangular island which is crossed by the Tropic of Capricorn. There is no need to say that its outline, its bearings, and its position in the Indian Ocean are altogether wrong; and that the two towns, situated one to the north-east, and the other in the centre of the island, and shown by the names of *Davona*, and *Ifair*, cannot be identified with any of those which we know.

JUAN DE LA COSA, Christopher Columbus's pilot, places Madagascar, on the contrary, to the *south* of Zanzibar (1500), but he gives it a less extent; and the two islands are placed in the centre of the Indian Ocean, at a great distance from any coast.

The editions of Ptolemy which were published at a few years' interval at the commencement of the XVIth century contain, for the most part, planispheres in which Madagascar is put a little nearer to its proper place, and it is elongated north and south, instead of stretching from east to west, as in previous maps; but in these it has a rectangular outline, and it is again joined to the Comoro Islands, whose name it takes. In the edition of Rome (1508), Ruich gives it the name of

\* See however, other opinions as to this in ANNUAL IV. pp. 21-26 (*Reprint*, pp. 423-426).

*Camarocada* (a corruption of *Komr* or *Comoro*); in the Strasburg edition (1513), it is called *Comortina Sancti Laurentii*; in the editions of 1520 and 1522, it is placed to the south-west of *Java minor*, very far from Africa; in the 1540 edition it figures under the name of *Menuthias*.

The first map which gives us an exact idea of the position and general configuration of Madagascar is the planisphere which SALVAT DE PILESTRINA prepared at Majorca in 1511; and for two centuries and a half this map underwent no material modifications; for those of Bellin and of Benyowski, which one might have expected to be more exact, both on account of their authors and their larger scale, are no better than others. Benyowski's however is interesting because of the considerable number of names of places and of water-courses which it gives. Later on, in 1656, Flacourt furnished important information as regards the outlets of the rivers and the positions of villages on the coast.

On the whole, all geographers, up to the middle of the XVIIIth century, copying their predecessors more or less servilely, and without any critical spirit, gave to Madagascar either a triangular form, as Behaim had done, or a rectangular one, like Ruich, or a tolerably correct one, after Pilestrina. It is not that each author has not introduced numerous alterations, generally however for the worse, into the copy which he had in his possession, and from which he drew his information, but a simple inspection of the maps of this period shows that each geographer followed rather his own fancy than made use of any new facts.

The marine chart of MANNEVILLETTE (1776) embodied the surveys of various French officers and hydrographers, and is the only one showing marked progress, both in fixing the true geographical position of Madagascar, and in the delineation of the coast-line. There are still many defects and errors in his map, arising from the want of accurate information as to many parts of the coast, particularly the north-west; while the east and west coast lines are shown with tolerable accuracy. Notwithstanding its imperfections, this map is the only one which, until we come to the beginning of this century, and get the surveys of Inverarity (1802) and of Captain Owen (1825), shows us a fairly correct outline of Madagascar.

In 1825 appeared the map prepared after the surveys made by CAPT. W. F. W. OWEN, R.N., and which, completing the preceding one, has served from that time until quite recently as the basis of all maps of Madagascar. The delineation of the coast is good, at least for a map of small scale; but there are many parts where much correction has been needed, especially in the south of the island, all round from the River Mâtitanana to St. Augustine's Bay. In this large section of the coast the position of the chief rivers is often erroneous by many miles, sometimes as much as twenty or more. Many errors on the north-west coast were rectified by M. Guillain in 1841, and I corrected a large number, both east and west, in 1871; more especially, the chain of east-coast lagoons has now for the first time been accurately shown, not spreading out into lakes of large dimensions, and at a considerable distance from the sea, but usually forming a narrow channel closely following the shore-line.\*

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\* See ANNUAL X. p. 205.—ED.



Since the cruises of the *Leven* and the *Barracouta*, directed by Capt. Owen, no one has made a hydrographical survey of the whole of Madagascar. But as opportunities have occurred, both French and English naval officers have rectified the position of various points, and have made surveys of certain harbours.

To sum up, we may say that among the numerous maps of Madagascar, there are *four* which, as regards the general form of the island, have served as the basis of all the others :—

1.—That of MARTIN BEHAIM (1492), which is utterly erroneous and fanciful ;

2.—That of SALVAT DE PILESTRINA, which gives a first sketch of the coast-line, a remarkable sketch, considering its date (1511) ;

3.—That of D'APRES DE MANNEVILLETTE, the first which was executed from actual survey (1776) ; and lastly,

4.—That of CAPTAIN W. F. W. OWEN (1825), which rectifies the errors of the previous maps, and is exact as a whole.

The latitudes and longitudes of various parts of Madagascar have varied very much in the different maps ; but every year has seen further rectification of the actual position of the island. And although it still needs that there should be direct connection with Europe by electric cable to ensure absolute exactitude, the longitudes of several points\* have now been determined with approximate accuracy by chronometer in connection with Mauritius, Réunion, Cape Town, Mozambique and Zanzibar.

If we now look at the maps of Madagascar as regards the *Topography of the Island*, we shall see that the mountains, up to the time (1871) when I published my first sketch-map, were traced altogether at random, according to the fancy of their authors. Homem (1558) only places them in the southern region. Berteli (1567) divides the island from north to south into two almost equal parts by an elevated chain ; and most of the maps from that period have imitated him. Some authors however, as Cauche and, later on, Bellin and Benyowski, have scattered high peaks anyhow over the entire surface ; while others, at the head of whom it is only just to name Flacourt, have rightly placed the watershed nearer the east coast. Lastly, the more recent maps, of Lislet Geoffroy (1819), of Dufour (1840), and of Colonel Lloyd (1850), show the entire island as a mass of mountains, of which the crest follows nearly the central line, and whose spurs, both on east and west, cut up the country into large valleys, with a vast circular area in the centre. The streams which water the eastern side are shown as nearly of the same size as those of the western half ; and forests cover almost the entire island. Now, since my explorations, we know that both the actual orographical and hydrographic systems are altogether different from the above. The half of the island which is situated to the east of a line dividing it diagonally from Cape St. Andrew to Fort Dauphin, consists almost entirely of a mountainous region ; while that half which lies to the west of such a line is, on the contrary, flat, although cut from north to south by straight

\* These are (1) St. Marie's, (2) Diego Suarez, (3) Tamatave, (4) Foulle Pointe, (5) Fort Dauphin, (6) Port Robinson, (7) Hellville (Nôsibé), (8) Mojangâ, (9) Nôsvao, (10) Ambôndro, and (11) Nôsvé. M. Grandidier at this place gives elaborate details of the steps by which the positions of these different points of the Madagascar coast have been fixed.—ED.

chains of hills. The watershed is much nearer the Indian Ocean than to the Mozambique Channel; and finally, the forests only form a circling belt, following the coast-line, from which they are more or less removed, according to the character of the country, and surround an immense region which is almost destitute of trees and shrubs.

As regards the marking of the position of different localities, almost every map of Madagascar has made some additions; and it is to Flacourt that we owe the first mention of the names of the east-coast rivers.

Just as the maps of Manneville and of Owen gave the true delineation of the coasts of Madagascar, so my map of 1876—which has been prepared not only from my own researches, but also from very varied information procured from all sources—showed for the first time the real positions of the mountains, the rivers, and the forests. Besides this general sketch of the topography of Madagascar, the surveys which I have made during my stay in the island have enabled me to prepare the following maps:

- (1) A detailed map to scale of  $1/200,000$  of the province of Imèrina, representing a surface of 18,000 square kilometres.\*
- (2) A map to  $1/100,000$  of parts of the East coast, from Antongil Bay to Andòvorànto, from Mâhanôro to the Mâtitanana, between the embouchures of the Mânambôndro and the Iàvibôla; and on the West coast, between Andrôka and Nosy Vóalàvo, and between the Bays of Bèmbatôka and Pàsindàva.
- (3) A map to  $1/145,000$  of the East-coast Lagoons, a total length of about 300 miles.
- (4) An outline to  $1/100,000$  of my routes, as follows:—
  - a. From Bèmbatoka Bay to Antananarivo;
  - b. From Antananarivo to Antsihànaka by way of the Ankay valley, and back to the Capital *via* Anjozòrobè;
  - c. From Antananarivo to the summits of Ankàratra, to Itasy, and back again;
  - d. From Antananarivo to the mouth of the Môronidàva (W. Coast);
  - e. From Matsèroka to Fianàrantsôa, and from thence to the mouth of the Mânanjàra (W. Coast to E. Coast);
  - f. From Mahanoro to Antananarivo;
  - g. From Antananarivo to Miakôtso and Fàrahàntsana (in Imerina);
  - h. From Antananarivo to Andòvorànto and Tamatave;

\* Mr. Cameron and the Rev. Dr. Mullens have also each made maps of this province.—A.G. I think that M. Grandidier has hardly done justice to the work of these two gentlemen. Mr. Cameron mapped a good deal of Imerina, and laid down several positions accurately by astronomical observation. Dr. Mullens took these as a basis, and from actual survey filled in most carefully the details, not only of the topography of Imerina, but also of parts of Antsihànaka, Imàmo, Vónizôngo, and Bètisilèo, with a minuteness never before attempted. In his large map of the island he has embodied not only his own work, but also the sketch-maps of Messrs. Sibree, Shaw, and Richardson, over parts of the south of the island he did not himself visit.

For notice of M. Grandidier's hypsometrical map of Imerina, see ANNUAL XI. p. 342.

While speaking of Maps of Imerina and of Madagascar, it is only fair to mention another name, that of Mr. Wm. Johnson, of the Friends' Mission, who has not only mapped very accurately Imamo, and Imerina south-west of the Capital, but also the Itasy Lake, and has prepared three successive editions of a map of the whole island, each an improvement on its predecessor, and embodying much additional information from native and other sources.

The finest and most accurate map of Madagascar as a whole is undoubtedly that recently published by the Rev. Père Roblet, S.J., in which all the geographical information available up to date is included, and which is a beautiful specimen of cartography. It is to nearly as large a scale as that of Dr. Mullens, and it includes also an inset map of Antananarivo.—ED.

- i. From Cape St. Mary to Tsifanily's village (S. Coast);
- j. From Tolia up the Oniláhy or St. Augustine's River (S.W. Coast);
- k. From Tsimanandrafôzana to Hima (W. Coast);
- l. From the mouth of the Mânambôlo to Mitraika (W. Coast).

The total length of country traversed in these different journeys was about 2000 miles.

Before my travels, a few others had taken some trouble to collect information upon the topography of Madagascar. In 1863, M. Coignet, a French mining engineer, examined part of the eastern coast from the peninsula of Anónibé northwards. In 1864, Messrs. Guinet and Cachin traversed the north-east coast from Antongil Bay to Diego Suarez, and then the province of Ankàrana. And in the same year Capt. Rooke, R.A., explored most of the East-coast Lagoons.\* The route from Tamatave to the Capital and back has of course been traversed by numerous travellers, government officials, missionaries, naturalists, and others from the time of Capt. Le Sage in 1816 to the present day; and so also, since 1867, has the route from the Capital to the Betsileo province.

Since 1867 numerous missionaries and naturalists have made journeys which have promoted geographical science. Of these may be noted: in the N.W.: Dr. Hildebrandt, the ascent of Mount Ambro (1880); M. Pollen, Nôsifaly and the Bay of Ambáro (1865); Rev. H. W. Grainge, the Ibôina province (1875);† Dr. Rutenberg, Mojangà to Mândritsàra (1877), and Pasindava Bay to Mojangà (1878).

In the North: Rev. Dr. Mullens and Rev. J. Sibree visited and mapped the Antsihanaka province (1874);‡ Bishop Kestell-Cornish and Rev. R.T. Batchelor visited the Ankàrana province (1876);§ Rev. J. A. Houlder, the N.E. coast, across the forest west of Antongil Bay, and to the Capital, *viâ* Mândritsàra and Antsihanaka (1877);|| Rev. C. F. Moss, the N.E. coast (1881); and Rev. R. Baron, Antsihanaka to Fênoarivo (1882).

In the Centre of the island: Rev. Dr. Mullens and Rev. J. Pillans explored and mapped much of the Imerina province, the Vâkinankàratra and Imâmo districts, the country between Imerina and Betsileo, and parts of Betsileo (1875 and 1876\*\*); and Messrs. Moss and Lord traversed the region between Antôngodrahôja and Lake Alaotra (1876).††

In the West: Messrs. Sewell and Pickersgill travelled from Antananarivo to the confines of Mênabé, to Ankavàndra and Mânandàza (1875);‡‡ Drs. Rutenberg and Hildebrandt penetrated into the Sâkalàva province of Mirâha to the plateau of Angàzy, 95 miles from the coast (1879); and in 1874, Mr. J. H. Maynard and, shortly afterwards, Dr. Mullens, followed the course of the Ikôpa and Betsibôka from the Capital to Mojangà, a route afterwards taken by many others.

In the South-east: Rev. G. A. Shaw went from Fianarantsoa to Ikôngo (1874); and Messrs. Street and Sibree, leaving the Capital *viâ* Betsileo in

\* See ANNUAL X. p. 207.—ED.

† See account of this journey, ANNUAL I. pp. 12-35.—ED.

‡ See *To Antsihanaka and back*: 1874. My map of Antsihanaka is still only in MS.—ED.

§ See ANNUAL, III. pp. 17-31 (*Reprint*, pp. 272-287).

|| See *North-east Madagascar*; 1877.—ED.

\*\* See *Twelve Months in Madagascar*; 1875; and Dr. Mullens's map of "The Central Provinces of Madagascar," and of the whole island to a large scale (12 miles=1 in.), 1878.—ED.

†† See ANNUAL II. pp. 3-19 (*Reprint*, pp. 131-149).—ED.

‡‡ *Ibid*, I. pp. 76-94.—ED.

1876, crossed the forest, followed the course of the Matitanana, and traversed the districts of the Taimôro, Taisaka and Tanala to Vangaindrano, and then northwards along the coast to Masingrano, and up the valley of the Mananjara by Ambohimanga to the upper plateau.\*

The Bara country was also visited: in 1876, by Messrs. Shaw and Riordan, who visited Ihôsy and Ivôhibè; in 1877, by Rev. J. Richardson, who succeeded, not without danger and peril of life, in reaching St. Augustine's Bay; † in 1880, by Revs. W. D. Cowan and T. Rowlands, who traversed the province as far west as the Isalo mountains. ‡

These journeys (except my own) have not been undertaken directly for geographical purposes; they have almost all been made by missionaries in accomplishing their professional duties; nevertheless the accounts which they have written, and the itineraries which they have drawn—and which, for the most part, depend upon the numerous positions which I have fixed both on the coasts and the interior—have greatly added to our knowledge of the country, which was, one may say, entirely unknown, in a topographical point of view, until within the last twenty-five years.

[Since the above was written, two other important journeys in previously unknown parts of Madagascar have been made: one in 1886, by Rev. R. Baron, to the north and north-west, *viâ* Mandritsara and the Androna province, and along the coast to Mojangà (see ANNUAL XI. pp. 261-282); and another in 1887, by Rev. J. Nilsen-Lund, through the Bara country to the western Tanôsy district, and then across the island to Fort Dauphin by the Tandroy province (see last year's ANNUAL).—ED.]

I shall terminate this chapter of the History of the Geography of Madagascar by tables, in which I have tried to collect together the names of all the capes, villages, river-mouths, bays, islands and mountains situated on the coasts of Madagascar, together with their approximate positions. § In the first column I have given, as far as possible, the local name with its true orthography. In the two next columns are marked the latitudes and longitudes of the different places, taken either from my own observations, or from those of navigators who have made surveys of those parts. I have then noticed the authors who have mentioned these names for the first time; and it has appeared to me interesting to transcribe these names with the often strange orthography which was originally given to them. And finally, a last column contains the principal names which have been applied to these localities at different periods. In foot-notes I have given the meanings of most of the local names.

*Translated from the French of A. GRANDIDIER,*

*By JAMES SIBREE, JUN. (ED.)*

\* See *South-East Madagascar*, in which a running-survey map is given of this route. My map of the Mananjara valley has not yet been published.—ED.

† See *Lights and Shadows*, etc.; Antananarivo: 1877.—ED.

‡ It should also be added here that Mr. Cowan has explored very thoroughly all the Betsileo province, as well as the Tanala and coast region to the east of it, and much of the Bara country to the west, and has embodied his observations in a very full and excellent map, which is engraved in illustration of his paper entitled "Geographical Excursions in Southern Madagascar," in the *Proceedings of the Royal Geographical Society*, Sept. 1882.—ED.

§ These tables are not of course given here, for they occupy in M. Grandidier's work 45 closely printed 4to pages of minutely detailed description of all the features of the Madagascar coast-line, all round the island.—ED.

## AMONG OLD MALAGASY BOOKS IN THE BRITISH MUSEUM :

THE "GREAT DICTIONARY OF MADAGASCAR" BY M. DE FROBERVILLE.

THE early records of the London Missionary Society's work in Madagascar show that Messrs. Jones and Griffiths, while in Mauritius, obtained access to valuable manuscripts containing information as to the manners and customs, geography and language of Madagascar. The names of C. Telfair, Esq. and of Sir Robert Farquhar, the Governor, are specially named as having aided them in this matter. Sir Robert Farquhar seems to have possessed a spirit not unlike that of Sir George Grey, and he interested himself deeply in all that concerned Madagascar. Thus we read, that he had taken "much laudable pains in preparing a Vocabulary, Grammar, and Dictionary of the language, collected by a French gentleman by many years' labour." My curiosity was aroused when I first read these statements, and especially so when I saw, in an old number of the *Evangelical Magazine*, a letter\* announcing that "Mr. Jones having gone to Madagascar with Mr. Hastie, the British Agent, remained in Imirne (Imèrina), and was occupied in researches and studies necessary for completing and translating into English the French and Malgache dictionary of M. de Froberville." Was this work ever completed and published? Or was it still among the government archives in Mauritius? I made various fruitless enquiries; but until the publication of Captain Oliver's very full and accurate work on Madagascar, I could find nothing definite about this tantalizing dictionary. Through Captain Oliver's book I learned that the whole of the valuable manuscripts on Madagascar once possessed by Sir Robert Farquhar had been presented to the British Museum by his son, Sir Walter Minto Farquhar.

My long-cherished wish to examine these manuscripts remained ungratified till last April, when I able to spend a few days in the Manuscript Room of the British Museum. By the kind help of the Superintendent of the Manuscript Department I was soon able to obtain the volumes, and to have in my hands and carefully study what are in all probability the very manuscripts used by Messrs. Jones and Griffiths.†

My chief interest in these manuscripts arose from a wish to see how far we have been right in claiming for the early missionaries of the London Missionary Society the honour of having reduced the Malagasy language to writing.

I wrote in 1873 that "the help obtained by Messrs. Jones and Griffiths from the labours of the French missionaries in the seventeenth century was very slight indeed, and the system of orthography at present in use is the result of their own studies and experience, and differs widely from that adopted by the French priests."

In the fifth number of the ANNUAL I gave extracts from some of these early vocabularies and catechisms, illustrating and confirming this statement. But I now think that in the former part of the sentence I

\* Dated Port Louis, Nov. 25, 1820.

† For the guidance of others, I may say this collection is numbered *Add.* 18,117 to 18,141.

have spoken too slightly of the help Messrs. Jones and Griffiths may have derived from the study of Sir Robert Farquhar's collection of manuscripts. To this however I will return after having described some of the manuscripts, and particularly the volumes containing De Froberville's Dictionary.

(1) *Rough copy of a French and Malagasy Dictionary.*

I begin by describing briefly a manuscript dictionary, both "Malgache-Français" and "Français-Malgache." This is written on coarse, hard, brown packing paper, and the edges seem to have suffered from fire. The book contains 151 folios, and it has no title or date. From a comparison of some words I conclude that this must have been either compiled by or for M. de Froberville as a rough draft of his work, or must have been one of the manuscripts used by him, as he says he extracted his own work from a "*foule d'écrits*."

Each page is divided into two columns: the inner ones are headed "Français et Malgache" (often spelled Madecasse), and the outer ones "Malgache et Français." The French words appear to have been often written first, and the Malagasy equivalents to have been inserted as they were found. Many of the French words stand alone, no Malagasy words of the same meaning having, I suppose, been found; thus, on the first page, out of 29 French words, 8 are so left. Many pages are left blank, and comparatively few are well filled. Often a single column only is filled, and the rest of the page remains blank. The writing is neat; but the ink has faded, and it is impossible to decipher some words.

I insert as a specimen a copy of one page:—

*Miouroïc*, Flairer, et aussi baiser, embrasser.

*Màrègnine*, Ne pas entendre, être sourd.

*Màngneharàlou*, Pecher a le seine.

*Manihitch*, Pecher avec le panier.....

*Manguilou*, Pecher au flambeau avec le.....

*Miàngoutch*, Moissonner, ou.....

*Maça*, .....

*Maharitch*, Endurer, patienter.

*Manguiri*, Desirer, souhaiter, envier.

*Matahotch*, Avoir peur, craindre.

*Manguehalan*, Avoir eu haine, haïr.

*Manguehahe*, Soupçonner.

*Miarou*, Jaloux, envier (?).

*Mahouli*, Paresseux (?).

*Maheri*, Brave, hardi, valeureux,.....

*Maliri*, Justice.

*Mi-malou*, Rendre justice, remontant au causer.

*Mataric*, Libéral, généreux.

*Mahidi*, Avare, avaricieux.

*Madiou*, Propre, claire, net.

*Macdtà*, Malpropre, sale.

*Miavou*, Orgeueilleux, hautaine, fier.

*Manguehanginili*,..... (?).

*Mi-aube*, Le.....au dessus d'autre.

*Manonboutenic*, Mentir, et aussi repiquer.

*Mametsi*, Repiquer, replanter, aussi mentir.

*Mangalatch*, Voler, filouter.

*Mamounou*, Tuer, assassiner.

In the second, or "Français-Malgache" column, among many words I could not make out, I found such familiar terms as *tani bare*, *rina* or *rinne*, *nine* or *ninne* (mother), *fananbadiana*, *manan badi*, *vadi*, *vadine*, *vilingue-vi*, *acanisou*, *lamba*, *loha*.

Occasionally short sentences are introduced ; e.g.,

*Anau tafa-héri an-tanàne*, Tu est revenu au village.

(2) *The French-Malagasy part of the Great Dictionary of M. de Froberville.*

Huet de Froberville (Barthélemi) was born Jan. 22, 1764, and died Feb. 12, 1835. He was educated for the army, and arrived in Mauritius in 1778. He served for a time with distinction in India, but returned to Mauritius. He soon afterwards quitted the service, and gave himself up to preparatory studies with a view to the writing of an Account of the Manners and Language of the Malagasy. He is stated in the *Nouvelle Biographie Générale* (1838), from which these facts have been taken, to have published\* the following works :—

(1) A large Malagasy Dictionary, of which, says the writer, Dumont D'Urville has given an abstract in the Philological portion of his *Voyage of the Astrolabe* ; 2 vols. in folio.

(2) Translations of the Holy Scriptures in Malagasy, according to the idiom of the south ; 2 vols. in folio.

(3) Collection of Voyages of Benyowski's interpreter, Mayeur ; 10 vols. in folio.

(4) A History of Ratsimilaho, King of Foule Pointe.

(5) A modernized edition of Flacourt's History of Madagascar (never completed).

This list shows how deeply interested in Madagascar M. de Froberville was. I will proceed to describe the first part of his dictionary. It is contained in 3 volumes, numbered *Add.* 18,118 to 18,120. The title-page reads thus : "Dictionnaire Français et Madecasse. Divisé en trois colonnes. La première renferme le mot Français dans l'ordre alphabétique, et le mot Madecasse le plus usité dans l'idiome du sud. La seconde, le mot Madecasse le plus usité dans l'idiome du nord. La troisième, les mots donnés à la langue d'après les elemens connus. Par Barthélemi Huet, Chevalier de Froberville, ancien capitaine d'infanterie, membre de la Société de.....de Histoire de France et cette des artes et sciences de Batavia. A l'isle Maurice le 4 février, 1816."

Following the title-page are 16 pages of "Préface nécessaire." The compiler states that he had access to a number of manuscripts, many of which were never intended to see the light. Then he explains the use of the three columns, and of the third he says that it contains the words he has given to the language. This alone needs a few words of explanation. A glance of the eye shows, he tells us, that though a number of vocabularies have been compiled, the Malagasy language had never received any serious study (a very just and important admission). He speaks of vocabularies containing 2500 words, and complains of the perplexing way in which the same word is said to be substantive, adjective, verb, etc. He says the natives express themselves with ease and

\* Lacombe states it was published at Paris in 1840 ; but I can find no notice of it as a printed book.

grace in their large public assemblies. His third column contains his own suggestions, and are mainly corrections of existing vocabularies made from analogy.

He gives an outline of the grammatical forms of the language thus :—

(1) To denote a substantive or noun of state or action, the initials *f*, *fa*, *fi*, are used. When these initials are absent it is usual to find as terminals *ane*, *anh*, *ene*, *enh*, *ine*, *inh*, *one*, *onh*, *oune*, *ounh*; or *its*, *itch*, *itz*, *itre*, *ots*, *otch*, *otz*, *otre*, *outs*, *outch*, *outz*, *outre*. Sometimes both are found.

(2) For the verb, or the affirmation of being or doing, the initial *f* is changed into *m*, and the words thus begin with *m'* *ma*, *mi*. (In a note are also given *mah'*, *magn*, *man*, *mang*, *mangha*, *mangn*, *mangneha*, the substantives of which would begin with *fa*, *fagn*, etc.)

(3) Adjectives have the initials *ma*, *man* and *mah'*, *omp* and *amp*.

(4) An agent is indicated by an initial *omp* or *amp*.

(5) For the subject that endures any action, *ompi* and *ampi* are used.

(6) To mark a past tense, the initial *m* is changed into *n* (*n'*, *na*, *ni*); sometimes *efa* is used, e.g. *efan'*, *efna*, *efni*.

(7) For the past participle, *fi* is used. This is an invariable rule.

(8) For the verb passive or neuter, *m'*, and *mi* are used.

(9) The sign of a reciprocal verb is *mifa*, or *mifan*;

(10) And of a causative, *mah'*, or *mampangh*.

(11) To point out a reflexive verb, either *midzari* is used before it, or *tena* after it.

(12) Repeated action is shown either by reduplication, or by using the adverb *hirich* after the verb.

(13) Negatives in *in* (as incivil) are shown by prefixing *tsi* or *tsimah'*.

Then follow tables giving five examples of the use of these prefixes and affixes, both according to the vocabularies and also "*d'après ma théorie*." Some of these are evidently guesses of one who had not much practical knowledge of the language; e.g. under the word *veri* we find "imperdable, *tsimahmiveri*." If the language had not received serious study before, such guesses were little calculated to increase the knowledge of it.

These volumes are ruled with pencil lines about an inch apart, and divided into three columns, as stated in the preface. The French words are in a different hand-writing from the Malagasy, and many of them have no Malagasy equivalents. Each volume contains 270 or 280 folios. I subjoin a copy of a single page :—

Cependant—a qui suit

*enghe tafare*

Cérat

Cerceau

Cercelle

*siriri*

(sarcelle)

Cercle

—a la lune

—de barique

—au soleil

Cercle de geomanteme

*rintan*

Cercler, entourer s'

Cercueil

*tamanga, sandoc, lavocha,*

*dehe*

*siriri*

*feke, faritch*

*faribolane*

*fehobarica, fehecazac*

*farimacouandrou*

*mifaritch*

*azon*



<i>tongouri</i> Cérémonie d'enterrement, <i>fandevenh</i> —de mariage <i>mirachebau</i> , <i>mivalevau</i> . —de circoncision <i>mifora</i> Cérémonieux Cerf	<i>fadi, fadine</i>
Cerf volant	<i>ahumbi ala</i> <i>koulin</i> <i>koulin lahe</i>

From pages 1 to 4 in volume 120 I take the following familiar words: *miarets*, *tsara fanghe*, *vanga*, *lamba*, *simbou*, *ampoumba*, *mouf*, *moufou*, *moufou maleme*, *moufou fissaots* (i.e. *fisaotra*, pain bénit), *vahoak*, *lane*, *roranga*, *houman ahets*, *mihatsara*, *manguina*, *tranghobe*, *foutchi*, *toubi*, *lalo*, *fandrouan*, *vilagne*, *fandrahouene*, *tanti*, *raket*, *milaha*, *filaha*.

(3) *The Malagasy-French part of the same Dictionary.*

This part of the dictionary is contained in five volumes similar to those described above, and containing from 250 to 300 folios each. The first 22 folios of vol. i. are left blank. Then comes a prospectus for printing the dictionary, if a sufficient number of subscribers could be found.

The title of the book is: *La Grande Dictionnaire de Madagascar*. The date 1816 is pencilled in the margin. True to its name, this is not merely a dictionary of words, but also of general information; and it contains many carefully written paragraphs taken from Flacourt and other French writers on matters relating to commerce, navigation, geography, manners and customs, projects for colonization, etc.

The last volume has also, from folio 192 to folio 282, a series of appendices under the following headings: (1) The Zafferaminis, (2) The Zaffebourahé, Zafehibrahim, (5) The Zafidienbélous and Entambaoes, (4) Madagascar, (5) Circumcision (*Famourane*, *Fifora*), (6) Nosse hibrabim, Nosse bourahé, or Isle St. Mary, (7) Marotte, Marosse, Mariri, or Nossi Manghabe, (8) Madagascar, (9) Anossi Androbeizaha, or Carcanossi, (10) Manghabe, or Bay of Antongil.

The language of the people is said to be analyzed and reduced to its simplest elements. The Malagasy words are arranged in alphabetical order on the left-hand page as the book is opened. On the right-hand page are the notes on natural history, geography, customs, etc., already mentioned.

The words in *a* begin with a classification of eleven different uses of *a*, some of which are quite wide of the mark, evidently simply the guesses of one groping after the explanation of certain phenomena; thus, *a* initial is said to be cut off so as to form an adjective; *aratsiene* becoming *ratsi*; *alsarane* becoming *tsara*; sometimes an additional *m* is used for the same purpose; thus, *azavane* becomes *mazava*. The use of *a* in forming imperatives is recognized: thus, *avi*, to come, is changed into *avia*, come!

I transcribe one page of the dictionary in order to give some general idea of its arrangement and contents:—

*Allae*, oter, tirer.

*Allansicamifanta*, faire sa paix avec quel qu'un se recommoder (?).

*Allao*, tenir, tiens, prends.

*Allava*, araignée.

*Allevine*, enterrer.

*Allini*, oter, tirer, défaire, détacher.

*Allini cannezon*, se dishabiller.

*Allini fotac*, décrotter, nettoyer.

*Alloco*, odieux, déplaisant, désagréable, qu'on n'aime pas.

Verbe privé de son caractéristique—*m*, *ng* | *hala*, *mam* | *hale*, *man-gue* | *hala* (vz. *hala*).

*Alla*, *alleeve* (?) paix, sica, pour; *mifanta*.

*Ala*, oter; o p. *ha* caract. impératif.

Vz. *alevi*.

Verbe privé de caractéristique, *ala*, oter (vz. *hala*) *ni*, euphon., ou le.

*Allini* pr. *ala*; *ni* ou *nih* oter le *cannezou*, habit corset.

*Allini* (vide supra), *ala*, oter; *nih*, *la*; *fotac*, boue.

*Allo*, *ala*, haïr.

*co*, je, moi, final dans les verbes.

The vocabulary, as one might judge from the size of the book, is large, and thousands of words can be easily recognized, some spelled exactly as we still spell them. As far as I could judge, almost all common words are contained in it.

Much irregularity exists in the spelling; thus *o* and *ou* are used for the *oo* sound, which the English missionaries first represented by *ou*, and finally by *o*. The final *tsa* (= Hova *tra*) is given as *tch*, *ts*, *ts*. The laws governing the combination of consonants were not understood; thus we find *anrac* | *ouvihana* for *andrak' oviana*; *anrou* for *andro*; *ant* | *ohen*—*bohils* for *an-tendrombohitra*.

The analysis of words is sometimes quite correct; at other times it is a mere guess. Thus we have *andava*, longtemps, de p. *lava*, long; *andé*, aller; *mandeha*; *manaho* au *leha*, *lia*, *lalan*, faire chemin; par elision, *mandeha* (vz. ce mot). *Andeha*, aller; *andé*, aller; *ha* pour *au*, *a* dans aller *a*. *Andrian*, libre, roi; *an*, un, le; *dian*, seigneur (*dria*); *andévou*, esclave (*endévou*, *andevocane*, *andévou*, *ondévou*, *ondeve*), esclave *ane* (carac. subst.).

As part of *La Grande Dictionnaire de Madagascar* is another volume (Add. 18,131 in the Bri. Mus. Catalogue), entitled *Essai Théorique sur la langue Madécasse*. It contains preliminary chapters on such subjects as the following: "De quelle langue dérive le Madécasse?" "De l'unité du langage;" "Des qualités, etc.;" "De l'écriture," etc. At the close of a general description on the same lines as that given above is the motto: "*In tenebris pugnans incerte praelia trado; sed silicem ferienti unus mihi sufficit. Lux erit, et vincam.*"

This essay is dated Port Louis, Oct. 28, 1815; but it has a dedication to His Excellency Robert Townsend Farquhar, Esq., dated Jan. 9, 1816. Including exercises and a "Catéchisme abrégé à l'usage des Insulaires de Madagascar, par M. L'Abbé Ant. Flageollet," it fills 158 folios.

The grammar is full, and reminds me much of that of Mr. Griffiths, with its long and useless tables of conjugations, etc. In many parts it is vague and unreliable; but at the same time it shows that a good beginning had been made towards analyzing the forms of the language. All the main verbal forms, *mi*, *man*, *maha*, *mifan*, *mampan*, etc., are given and explained.

I copy a few sentences from one of the exercises:—Je vous salue;

*Salam anò* (au singulier), *anarò* (au pluriel). Monsieur, votre serviteur ; *Ra zaho ompanonpono*. Je suis le votre ; *Zaho ompanonpono*. Comment vous portez vous ? *Porla tsara hano* ? A votre service, et vous Monseigneur ; *Zaho no ano Ra*. Je le connais ; *Zaho mifant aze*. D'ou venez vous ? *Avi teza anò* ?

I noticed with interest that among the authorities named by M. de Froberville are the vocabularies of Challand\* for the dialects of the north (1773), and Flacourt† (1558), for those of the south. I examined these and found that many of the words and sentences given have been derived from these two sources. Led by a notice of Mr. Sibree's I also looked into the Vocabulary of Dumont D'Urville. This is found in the first volume on "Philology" in his Account of the Voyage of the *Astrolabe* (Paris, 1833). It contains a copious introduction to Malagasy grammar, and vocabularies in French and Malagasy and in Malagasy and French, filling 362 pages. The writer states that he obtained all this in Mauritius from one who had long resided there and had made the Malagasy language a special study, but who was unwilling that his name should be published, "*un manuscrit très-volumineux*." Coming to this work after having spent some time on Froberville's manuscripts, I found that much of the material was the same, and I came to the conclusion that he must have been the gentleman referred to above. This conclusion I afterwards found confirmed by the notice of M. de Froberville in the *Nouvelle Biographie Générale* already quoted. Whether therefore the great work of Froberville was really printed or not, we have in Dumont D'Urville's volume at least the substance of it ; and he too quotes the collections of Flacourt and Challand as having been the main foundation of Froberville's work. A short comparison fully confirmed this opinion, and showed me that a very large proportion of the words given by Froberville (and consequently by Dumont D'Urville also) is to be found in these two earlier collections, an attempt however having been made to improve the orthography. Any one wishing to obtain in the most concise and accessible form material for estimating the knowledge of the Malagasy language already possessed by Europeans before the founding of the London Missionary Society's work in Autanànarivo in 1820, could not do better than use this clearly printed abstract by Dumont D'Urville, comparing with it, if possible, the two vocabularies of Challand and Flacourt, on which so much of it rests. Where the information it contains differs from these, we may conclude that M. de Froberville had inserted information derived from other sources.

I do not imagine that much use could be made of these collections of Flacourt, Challand, or Dumont D'Urville for enriching or improving our modern dictionaries. For the dialects of the interior, our own dictionary would of course be much fuller ; and I think the French missionaries will have noted almost all the words used on the coast, as their earlier work at least led them to study chiefly these dialects. The significance for us of these old collections is simply historical. Merely as vocabu-

\* *Vocabulaire Malgache, distribué en deux parties : La première François et Malgache ; la seconde Malgache et François*. Par Mr. (sic) Challand, Prêtre de la Mission et Curé de la Paroisse St. Louis à l'Isle de France. De l'Imprimerie Royal, 1773. [Part 1 occupies pp. 1-48, and Part 2 from 49-92.]

† For Flacourt's Dictionary, comp. ANNUAL V. p. 18.

laries they are literary curiosities; but as proofs of what knowledge of the Malagasy language existed when our predecessors began to work in Imèrina, they are, to me at least, of deep interest. And what do they teach us? They show at least that some thousands of words had been collected, and that the meaning of the principal forms of the language was recognized. Thus Messrs. Jones and Griffiths certainly had valuable aid in their early studies. On the other hand, it must be remembered that when they began to work in Madagascar, no knowledge of letters existed among the natives; no permanent results had followed the efforts of the French missionaries at and near Fort Dauphin; nor were any of the catechisms or conversations in these old collections so written as to convey any clear ideas to the natives. It is only with great difficulty that European students of Malagasy can make a guess at their meaning. To the Hova they would sound almost like an unknown tongue\*. Whatever number of individual words had been collected, the art of *using* these words correctly—of forming them into intelligible sentences—had *not* been acquired. I question whether a single sentence in any of these books was of real value to the English missionaries. While therefore allowing their indebtedness to the collectors of these early vocabularies, etc., we can still maintain that the form of the language as it was ultimately fixed, and as it is written to-day, is to be ascribed to the patient study of Messrs. Jones and Griffiths. They laid the foundation of what is being done for literature and education in Madagascar to-day. Others have made individual contributions since; and further improvements may yet be introduced in our mode of writing; but to these two Welshmen the people of Madagascar lie under a deep debt of obligation, and their names are justly held in honour by all who are interested in the cause of intellectual progress and civilization in Madagascar.

WILLIAM E. COUSINS.

\* In examining the Farquhar collection of MSS., I found in *Add.* 18,133 several translations of verses of the Psalms. These admirably illustrate the remark made in the text. I subjoin the heading and two specimens:—

*Traduction Malgache du 83eme Psaume de David, suivi de diverse fragments de Psaumes du même également traduites en Malgache.*

Manompoua-Zanharé —, hai-anariaux-kouni-anpi-servi-anazi-!

Anariaux toumouitch andrahon-d-'Zanhare-, naik' andrahon-salani-tchaou-d-'Zanhare-nai-,

Manangana-tanghane amni tchaou-malala-anazi-an-davane-anariaux-ni-alaine, kela manonpona Zanharé.

Aniou-amiane-Zanharé-avilomane-anariaux-ni-Zanharé nanguéhanou-ni-langnietch-naihai-ni-tané-!

Modernized:—

Manompoua Zanahary hianareo (koa?) ny mpiserivy azy. Hianareo tomoetra an-tranon-Janahary.....tranon-Janaharinay. Manangana tana an-trano malala anazi (an-davan?) hianareo ny alina—manompoua Zanahary.

O Zanharé-, t' amn-nandianana-t-aloha-ni-oulou-marou-aniaux-t' amni-nandalouvanan-t-angnieftch-t-angne.

Ni-tané-nangourouhourou; ni languitch-ni-mana-mantzari-aurane-, haimassou-d-Zanhare-t-Sinai-, hai-massou-d-Zanharé-n'-Israël!

Modernized:—

O Zanahary, tany ny nandehananao talohan' ny olona maro (Hianao?), tany ny nandalovanao tany an-efitra tany, ny tany nangorohoro, ny lanitra (nana?) nanjary orana imason-Janahary tao Sinai, imason-Janaharin' ny Israely.

## A WILD-BOAR-HUNT IN MADAGASCAR WOODS.

FOR a long time I had wished to see a native boar-hunt, but had always been disappointed; so on hearing, one day when staying at Ankèramadinika, that there were some hunters in the neighbourhood, I determined to send a man over to negotiate with them. I cannot say I really expected them to come, and was therefore as much surprised as pleased to see a string of men, and a longer string of dogs, in Indian file, winding over the hill in front of the house on the evening of the second day. In a short time men and dogs stood before me. The men, without the least expression on their faces, made the usual salutations and squatted down; the dogs were soon fast asleep, except four or five, which kept licking some ghastly wounds, evidently only just received. These dogs were of all shades and sizes and of all breeds, or rather, of no breed. Some had the characteristic prick ears and jackal look of one type of native dog; others, the rough hair, hound ears, and heavier build of the other type; while the rest were mongrels; but all were in much better condition than are most Malagasy dogs.

The men were all Bèzànozàno, fine tall fellows of a redder brown than the Hova, their hair plaited in numerous small braids all over the head, and enclosed in a skull-cap of neatly woven grass, or of undressed cow-hide. Their arms were a heavy spear, the butt-end finishing in a small spade-like blade, and a hatchet. Their dress was a loin-cloth and *lamba* of coarse *rofia*-fibre cloth; one or two had earrings and bracelets; and all had the long native purse of hide, with their money scales and bamboo snuff-box, tied round the waist.

Turning at last to the man who seemed to be their chief, I said, "You have been hunting on the way here, and many of the dogs are hurt, and all are tired; they won't be able to hunt to-morrow." But they assured me that after a good meal and a night's rest they would be quite fresh again, but that neither they nor the dogs had tasted food from six o'clock in the morning, and had been hunting hard all day. After some time, and a good deal of good-humoured bantering, a bargain was struck, and they went to the village in high spirits, having, they considered, got the better of the white man, and obtaining a large lump of beef as well.

Next morning they returned to the house and began hunting at once, keeping along the edge of the forest; some of the dogs—I cannot call them hounds—staying at heel, and the rest trotting along quietly in front of the men. At times they put their noses to the ground and ran a little way into the forest, the men encouraging them by a peculiar cry, beginning on a high note and running down the scale, "*Ah! ta! ta! ta! ta! ta!*" at the same time slapping their bare thighs. Every now and then one of the men, who seemed to be most skilled in tracking, would stoop down and give his decision as to whether the spoor were worth following or no; and at last, both he and the dogs agreeing, off they trotted, not by any means at a great pace, and perfectly mute.

"How on earth is one to follow mute dogs through *that*?" I asked myself as we turned into the forest; but the men jogged along more merrily, and I followed as best I could, up fearful hills, and, worse, down

them, for they were very slippery and ended invariably in a quagmire or a bed of slimy mud. The trees were so close that one had often to turn sideways to get through, and all were woven together by the huge climbing lianas, many of which (the *Avaotra*, *Smilax Kraussiana*, Musn.) were armed with short curved spines. Somehow or other these always seemed handiest to one's grasp, and the consequence was much the same as suddenly clutching a spinning-bait to save one's self from falling.

The men seemed not the least excited; and at length finding time and breath to ask my nearest neighbour how they knew where to go—for our movements seemed, to say the least of it, erratic—he only gave me a sarcastic smile and deigned no answer. I tried another man, with the same result, and I soon found that they were merely following the track.

At last the men show a little excitement, and I a great deal, for, about a quarter of a mile away, we hear the dogs baying; the men quicken their pace into a run, wielding their axes to clear the way up a frightful hill, and I bless the day I went in for cross-country running at home in England. The men begin to give low peculiar whistles, with their mouths wide open, and I forget the boar for a minute to wonder how they do it. Again I venture a question or two, but am severely silenced, as if I had been, or rather, ought to have been, listening to some distinguished amateur singer; yet the man who rebuked me gave at the same time a yell which in my opinion would have set all the beasts in the forest on the move. However, he seemed to think otherwise, for he immediately turned round, and in a whisper requested me not to breathe a word, or I should startle the pig. We soon reach the dogs, and the men balance their spears ready to strike, but, just when too far off to throw them, the boar "breaks bay" with all the dogs on his heels. Once more he stands, and once more he breaks, and this time goes miles away, and, to my infinite relief, we stop running.

Very shortly afterwards I heard a dog baying, and wondered why the men take no notice of it. I mildly suggested that the pig might be there. This time I did get an answer: "That is a lost dog asking its way back; you will soon hear them all, when they find out we are not following. We never do follow a wild pig; it only wastes time." Accordingly, the forest soon resounded with lost dogs, which kept coming in one by one in answer to a different cry from the men. It struck me as rather an anomaly that dogs should run mute, even when viewing, and should give tongue when thrown out; however, I do not see how the men could have got them together if they had not done the latter. The running mute was a horrible nuisance, for the wretched hunters had to follow the exact path of the boar.

After this another boar was found and lost, and it was not until after two o'clock that a third scent was hit off. It was naturally very cold, but grew stronger as we dipped into a deep ravine; and at last there arose such a yelling and grunting as had not till then gladdened our ears. This came from a tough old boar, so the men said, "who did not mean to run at all, but to stay where he had made his bed." Unluckily that spot was on the other side of the ravine, and so thick a mass of vegetation lay between that we came to a dead lock; but one of the men, seeing a tree that had fallen across, cut his way to it, and we all crept over, to find ourselves only about two hundred yards from the fight, which was

growing fiercer and fiercer every moment. I carried no spear, but an *antsy lava*, a kind of thick rapier, that thieves here are said to use for finding out "rats behind the arras." As soon as we were about ten yards from the boar, which was completely hidden by tall fern, the men told me to stay where I was, and thinking they meant to surround the beast, I consented. They then went on a little, and getting into line, with their spears held high above their heads, rushed into the midst of the dogs. I heard furious grunts, saw the mens' heads bobbing about in the fern, which was neck-high, and, before I knew what was going to happen, saw two huge noses coming straight for me. I then saw how useless my weapon would be, and I should not be adhering to the strict truth did I say I was not in what school-boys would call "a blue funk." However, I thought a clear space before me would be advisable, so I made a sweep with my gimcrack sword, inwardly hoping it might turn the infuriated brutes, now within a couple of yards of me. It did, and looking up, I saw the brown body of a native swaying from side to side, and from it proceeded a flash of light. It was the broad blade of a spear, which, just missing the dogs, pierced the boar behind the shoulder. A wild rush of twenty yards followed, an angry bite, and the spear snapped short off, a final rush, and the boar lay dead. The sow escaped with a flesh wound, to be finished, after a desperate fight for her life, by the same man's spear, two hours afterwards and about two miles away. This sow charged the man who killed her, and he, without moving from the spot, lifted his leg to give her the final death-blow, as she passed beneath it, with his axe.

I had then time to examine the quarry. The boar was a fine beast with rather short tushes; his back covered by long reddish bristles, and his face rendered hideous by two large lumps spreading out below the eyes. His strength must have been very great to have bitten through so thick a spear-shaft after receiving a mortal wound.

The men told me they had deceived me on purpose, and had placed me where they thought I should be out of danger; but, as it happened, the pig went my way; and they said, had I wounded one with so short a weapon, I should without fail have been ripped open; for even if the blow had been sufficient to cause death, the animals' weight would have carried them on the top of me before that took place.

These men must be able to throw with very great force and precision, for it is extremely difficult to drive a spear home with two hands into a boar lying dead; yet the spear that killed the one just described nearly pierced the skin on the opposite side, and was thrown from some distance.

By the time both the pigs were slung and cleaned—the men having eaten the liver, slightly grilled, and carefully divided the entrails among the dogs, so that each should have his share—it was nearly six o'clock. From eight in the morning to six at night is hard work for the tropics, and I was not sorry to get back home.

C. P. CORY.

X  
N.B.—The boar in the upper forest is the *Potamochoerus Edwardsii* (Grand.). It is larger than *P. madagascariensis* (Gray) which inhabits the coast and lower forest region.

## MADAGASCAR ORNITHOLOGY:

MALAGASY BIRDS ARRANGED ACCORDING TO THE NATURAL ORDERS,  
WITH NOTES ON THEIR HABITS AND HABITATS, AND THEIR CON-  
NECTION WITH NATIVE FOLK-LORE AND SUPERSTITION.  
(PART I.)

## CHAPTER I.—GENERAL AND INTRODUCTORY.

THE Natural History of Madagascar is a study of great interest not only to the zoologist, but also to the geologist and physical geographer; for although the animal life of the great African island is by no means so varied and striking as that of some of the other large islands of the world, its peculiarities and its omissions are extremely significant; and the many peculiar and isolated groups of animals it contains throw much light upon the physical condition of the island and its surrounding groups in earlier geological periods.

This statement is true of the Mammalia, the Reptiles, and the Insects of Madagascar, and it is no less true of the Birds of the great island. In a former number of the ANNUAL (No. X. pp. 129—145) a good many interesting facts were described in a paper by Mr. Alfred Russel Wallace, taken from the valuable work of that distinguished naturalist on *The Geographical Distribution of Animals*, and reproduced in our pages by his kind permission. And in the number for last year (No. XII., pp. 427—439) additional information was given on the same subject in an article translated from the French of the accomplished scientist M. Alfred Grandidier. To these papers I would refer the reader for fuller details as to the numerous peculiar birds found in Madagascar, and the curious, unique and distantly related forms presented by many of them.

My object in the present and subsequent articles is twofold: first, I purpose to collect together all the available information as to the Birds of this country, as regards their forms, their habits, their peculiarities, and their habitats. We know as yet comparatively very little about these beautiful and interesting living creatures, and what has been noted about them is chiefly in the French language, in the works of M. Grandidier and M. Pollen; but it will be interesting, I think, to translate this information, and to put together the little we do know, and this may possibly induce others to note their habits and peculiarities more minutely, and so eventually to widen our knowledge of the subject. I also purpose to bring together the many allusions to birds and their habits in Malagasy Folk-lore and Proverbs, as well as to point out the descriptive character of many of the native Names for the Birds of Madagascar, and the light these often throw upon their habits.

And secondly, I shall give, as far as practicable, a complete List of the Birds of this island, as known and described up to the present time, arranged according to the most recent classification of competent ornithologists; giving both their English and their scientific names, and also those by which they are known in Hova or standard Malagasy, as well as in the various provincial dialects. This list will follow as appendices to the chapters describing each of the Orders of the Malagasy Birds; and as I



thought it would be interesting to see at a glance the *omissions* as the places filled in the various Families, I have included the names of those which are *unrepresented* in Madagascar.

The Avi-fauna of Madagascar comprises, as at present ascertained, no less than 240 species, including sea-birds, among which there are naturally numerous wide-ranging forms common to many other countries; and among these latter there is of course little that is peculiar or of any special interest. It is among the land-birds proper, numbering 150 species,—and omitting many shore- and water-birds, as well as several of powerful flight and therefore of wide distribution—that we find some of those peculiar and isolated types of bird which, as Mr. A. R. Wallace remarks, “speak to us plainly of enormous antiquity, of long-continued isolation, and not less plainly of a lost . . . continental island [or archipelago of large islands], in which so many, and various, and peculiarly organized creatures could have been gradually developed in a connected fauna, of which we have here but the fragmentary remains.”

Many lists of Madagascar Birds have been published by travellers and naturalists. Flacourt, in his *Histoire de Madagascar* (1661), enumerated in the xith chapter of that work 56 birds under their local names. In the following century Brisson described 31 species, which had been sent to Reaumur by Poivre. And in 1840 Sganzin published in the Strasburg Natural History Society's *Mémoires* the Malagasy and French names of 84 birds. But it was in 1848 that there appeared, in a German review, the first detailed and systematic list of the Birds of Madagascar, prepared by Dr. Hartlaub, comprising 94 species. This list was afterwards increased, in a more complete work by the same scientist in 1861, to 153 species. Other lists were published, by Jules Verreaux in 1865; by M. Grandidier in 1867; and especially by Messrs. Schlegel and Pollen, in their fine work *Recherches sur la Faune de Madagascar*, in 1868, who gave a description, more or less complete, of 143 species of Madagascar Birds, together with plates of many of them. And in 1877 Dr. Hartlaub published a second and enlarged edition of his Ornithological Fauna of Madagascar, in which 214 species of birds found in the island are described. But by far the most elaborate and complete account of these beautiful creatures (as well as of all the animal life of this country) is contained in the unequalled six volumes, four of plates and two of text, forming part of M. Grandidier's grand work on Madagascar, still in process of publication. In these plates not only are the external forms and plumage of the birds shown in their actual colours, but their osteology is fully given, and, in the case of the most curious birds, their physiology is also carefully delineated.

It is to French naturalists that the discovery of the greater part of the Malagasy Birds is due: to Poivre and Sonnerat, Bernier, Goudot and Rousseau, and Lantz, Humblot and Grandidier. But much has also been done by others, especially by Crossley, Edward Newton, Plant, Waters and Meller, among English naturalists, and by the Dutch travellers Pollen, Van Dam, and Van der Henst, who, together with some others, have made important collections.

Madagascar possesses a considerable number of genera and species of birds peculiar to itself: 35 genera and 129 species, distributed among 54 families. The result of a detailed study of the Malagasy Avi-fauna is,

says M. Grandidier, "that it has a very specialized character, and that, notwithstanding the small distance which separates Madagascar from the African continent, its affinities are much greater with the extreme East than with Africa; since, if we leave on one side all the birds of powerful flight, there are about twice as many more allied to Oriental than to African species, besides which the greater part of the characteristic genera of Africa are entirely wanting.

"It is now known that Madagascar comprises three 'Regions,' which are very distinct in their physical aspect, their geological formation, their vegetation, and their climate. These are: (1) the Region of the East and North-west, which is mountainous, damp and covered with wood, or with herbaceous plants of greater or less size, according to the localities; (2) the Central elevated Region, which is very bare and rugged, almost entirely destitute of trees and shrubs [except small patches of forest still left in a few places, and on the margins of the rivers, and in the inhabited portions], and where a bad coarse herbage scarcely covers the clayey soil of deep red; and also (3) the Region of the West and South, which is flat, dry and sandy, with here and there small woods and thinly scattered trees. The centre of the island contains only few birds, almost all of powerful flight, principally birds-of-prey, swifts, swallows, and water-birds; in fact, these are regions which can give harbour to only a few animals.

"The birds which are most commonly seen in the central portions of Madagascar are kestrels, kites, owls, swifts and kingfishers, the two last named along the numerous water-courses; swallows, crows, larks, quails, cardinal-birds, ox-birds, and egrets near the rice-fields; and wild-ducks, wild-geese and divers in the marshes and lakes. We also meet, although more rarely, with parakeets, peregrine-falcons, bee-eaters, peewits, warblers, flycatchers, and partridges; bustard-quails and various waders are also met with on the banks of the lakes and along the rivers; and also dwarf-rails, woodcocks, and curl-crested gulls.

"The two coast regions are, on the contrary, well peopled with birds of all sorts, and while the greater part of these inhabit indifferently one or the other, it is no less true that there are a certain number which have their habitat almost exclusively in one region only, and which give it its special characteristics. There are also some which keep to a still more limited area, not going beyond a very restricted range. At the present time 50 species are known which are peculiar to the Eastern Region and to the almost identical district of the North-west, and 23 species peculiar to the Western Region. We consider as 'peculiar to a region' the species which, so far, have only been found in that region, or which, while very common to one, are only seen very exceptionally in the other. No doubt in the future numerous modifications will have to be made in these numbers, but meanwhile the special characters of the two Avi-faunas are not the less sharply defined.

"It is interesting to note that a certain number of species, which are of sedentary habits, undergo certain modifications under the influence of the physical conditions with which they are surrounded; in fact, as we have already said, the biological conditions are very different in the two regions of the East and North-west, on one hand, and of the West and South, on the other hand. These differences manifest themselves in the

birds of the West in diminished size, and in a tendency to albinism and general paler colouring." "Even the eggs of certain of these birds have lighter and less vivid colour, and are a little smaller, than those of our eastern relations."\*

The lists of birds to be given, together with the native names, both of the island and provincial, are taken in the main from a small quarto pamphlet of eight pages published by the Rev. W. Deans Cowan some years ago. I believe however that the scientific information there brought together is partly due to that accomplished German naturalist, Dr. J. M. Hildebrandt, whose death here in 1881 was such a loss to science and to our scientific knowledge of Madagascar, especially in its connection with Africa. This list however has been completely re-arranged, according to the Natural Orders, and to it I have added other particulars from later information, especially from M. Grandidier's work. In the classification of the Madagascar Avi-fauna, now, I believe, done for the first time in English, I have followed the arrangement laid down by Mr. R. Bowdler Sharpe, F.R.S., etc., who is well known as probably the greatest English authority on ornithology, and adopted by him in his treatment of the birds in Cassell's *New Natural History*, vols. iii. and iv. In the nomenclature of genera and species I have chiefly followed M. Grandidier, as the first authority on these points as regards the Ornithology of Madagascar.

In Mr. Cowan's paper the native names, by which most of the birds of the island are known in different parts of the country, are carefully noted; and as many of these are very significant and descriptive, pointing out some habit or peculiarity, I shall give translations of such names, for they frequently illustrate the native power of seizing the salient features of the living creatures which come under their notice. In some cases also a native proverb points out some marked peculiarity of a bird; while other birds are closely connected with the native superstitions and beliefs.

Each of the Natural Orders in which the Madagascar Birds are arranged will be now noticed separately, and any points of interest with regard to individual species, genera or families will be pointed out as above described.

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\* The above five paragraphs are translated from Grandidier's *Histoire Naturelle des Oiseaux*; and the preceding paragraphs as to the lists of Malagasy Birds are also condensed from the same work.

I will add in this note what M. Grandidier says further as to the special character of the Madagascar Avi-fauna. He remarks that it includes 35 genera and 129 species which are all peculiar to the island, and are distributed among 54 families. The 35 peculiar genera, most of which possess great interest from an ornithological point of view, are: (1) *Coracopsis* among the Parrots; (2) *Butorichis*, a Harrier-Eagle; (3) *Heliodilus*, an abnormal Barn-Owl; (4) *Coua*, Lark-heeled Cuckoos; (5) *Leptosomus* and (6) *Brachypteracias*, which connect the Rollers and the Bee-eaters; (7) *Neodrepanis*, a Sun-bird; (8) *Philepitta*, Paradise-birds; (9) *Falculia*, an aberrant form of Starling; (10) *Hartlaubia*, between the Starlings and the Thrushes; (11) *Hypositta*, a Nuthatch; (12) *Eyoessa*, (13) *Ellisia*, (14) *Dromæocercus*, and (15) *Mystacornis*, all species of Warblers; (16) *Thamnornis*, a Tailor-bird; (17) *Berniera*, (18) *Oxylabes*, and (19) *Crossleyia*, species of Babbling-Thrushes; (20) *Tylas*, Bulbuls; (21) *Newtonia*, and (22) *Pseudobias*, species of Flycatchers: (23 to 29) *Artamia*, *Cyanolanius*, *Leptopterus*, *Lantzia*, *Oriola*, *Vanga*, and *Xenopirostris*, Passerine birds allied to E. Indian, Australian and Polynesian species; (30) *Euryceros*, a very remarkable bird allied to the Orioles; (31) *Calliclicus*, a Butcher-bird; (32) *Funingus*, a Pigeon; (33) *Lophotibis*, a Crested Ibis; 34 *Mesites*, very curious birds among the Waders; and lastly, (35) *Margaroperdix*, a Striped-Partridge, allied to the Quails.

## CHAPTER II.—THE RAPACIOUS BIRDS.

The Rapacious Birds (*Raptores* of the earlier naturalists, but in later classifications called *Accipitres*) of Madagascar comprise 22 species, the majority being various kinds of hawks, kites and buzzards, but including also several owls and two eagles, but no vultures.

The most common bird of this Order is the *Papàngo* or Egyptian Kite (*Milvus ægypticus*), a large bird of almost world-wide distribution and found all over the island. It may be seen every day flying gracefully along in search of the lizards and snakes, and the mice, rats and small birds, which form its chief food, and continually swooping down upon its prey. Towards the end of the rainless season, when the long dry grass is burned on the bare hills and downs of the interior, the *Papàngo* may be noticed sweeping backwards and forwards close to the edge of the blazing grass, so as to pick up the smaller creatures escaping the advancing flames, or those which have been overtaken by them and killed. I have occasionally observed several hundred of these hawks in the neighbourhood of *Ambòhimànga*, hovering in the air, or describing great circles, at an immense height, and have wondered how such large numbers could obtain food.

This bird is the dread and detestation of the country-dwelling Malagasy, for it swoops down upon their chickens and pigeons, and is only scared away by their loud cries and excretions. From these habits comes one of its provincial names, *Tsimalàho*, i.e., 'The-one-who-does-not-ask,' but takes without saying 'By your leave.' It is constantly seen in company with the White-necked Crows, and like them feeds near the villages, especially where oxen are killed. Although it does often carry off the people's fowls, it is very useful in destroying vermin. The name *Papàngo*, says M. Grandidier, comes from the words *papy*, to watch for, and *àngona*, a meeting, because these birds hover continually above the native villages. Mr. Dahle however thinks the word to be one belonging to the original African element in the Malagasy language, and allied to the Swahili *kipànga*, a bird-of-prey, and to a Zulu root *panga*, to seize, ravage, etc. (see ANNUAL IX. p. 108). Another of its provincial names is *Pariakoròvana*, or 'Disperser-of-thrushes.'

Several Malagasy proverbs refer to the *Papàngo*; e.g., to its rapacity and boldness, in the following: "Acting like a Kite's claws: not taking gently, but greedily." So again: "A Kite swooping over the sea, swooping also over people's land;" and again: "The Wild-cat is weary, for the fowl (it was seeking) is carried off by the Kite." Occasionally it seems that it catches more than it can eat, for another proverb says: "The Kite that caught a Tortoise: it certainly got it, but it did not get much after all." And its occasional food of locusts is mentioned in this: "Not (like) a little swarm of locusts and afraid of a Kite." One of the native *Hain-tèny* or Oratorical Flourishes says: "The Kite is an arrant thief, the Crow is blear-eyed, and the Long-necked brown Stork (*Tàkatra*): all are rogues and abuse one another."

Another very widely-spread rapacious bird is the little lively and noisy *Hitsikitsika* or Kestrel, which is found in or about every village (at least in *Imèrina*), often perched upon the gable 'horns' of the houses or even on the extreme point of the lightning-conductors. It is

by no means shy, and one can sometimes approach it quite closely, and see its bright fearless eyes, before it darts away. It is fond of the same resting-place and, after a noisy chatter with its mate, takes a sweeping flight for a few hundred yards and returns to its former position. Its name, which, with slight variations, is practically the same all over the island (see Tabular list), is probably an imitation of its peculiar querulous cry. A Malagasy verb, *mihitikitika*, 'to strut, to swagger,' is probably taken from the name of the bird; or is the reverse the case? Several native proverbs refer to the Kestrel's quick restless flight and its frequent habit of hovering aloft, poised almost motionless, or with an occasional quivering of the wings, which, in Malagasy idiom, is called 'dancing' (*mandihy*). E.g., "The Kestrel is at home in dancing, and the Little-grebe (*Vivy*) is at home in the water;" "The Kestrel does not forsake the precipice where it nests;" and, "The Kestrel is not hovering (lit. 'dancing') without reason, for there below is something (in the way of prey)." And again: "Dance, O Kestrel, that we may learn also (to do it) when it is harvest time." And its habit of sometimes driving away the robber Papango, but itself appropriating the Kite's intended prey, is referred to in a proverb applied to one who was expected to be a benefactor, but turns out an oppressor, thus: "He was thought to be a Kestrel to be honoured (or, to protect the birds), but becomes a Falcon (*Vòromahèry*) carrying off the chickens." Among some tribes, or, perhaps, only certain families, the Kestrel is a sacred or tabooed bird. M. Pollen says: "Being one day hunting in the neighbourhood of Anòrontsanga, I killed one of these Kestrels, when a farmer came to meet us, saying that I had committed sacrilege in killing, as he said, a sacred bird. He begged me to leave it to him, so that he might bury it in a sacred place. I hesitated, except to grant him the beak of the Kestrel, which had been broken by the shot. The good man, accompanied by a slave carrying a load of sugar-canes, and happy to be able to take away any part of the sacred bird, tried to express his gratitude by offering me half of the load. I have however observed that this bird is not sacred among the Antankarana, the Bètsimisaraka and other tribes."

Another hawk worth noticing, although much less common than the two previously mentioned ones, is the *Vòromahèry* or Lesser Falcon (*Falco minor*), a small but very courageous bird, which has long attracted the attention of the Malagasy for its swiftness and fearlessness. Its native name, which means 'Powerful-bird,' is also that of the tribe of Hova Malagasy who inhabit the Capital and its near neighbourhood; and probably from that circumstance this Falcon has been adopted as a kind of crest or emblem by the central Government, and it used to be engraved on the official seals. Large metal figures of a bird, popularly supposed to be the *Vòromahèry*, are fixed on the ridge of the roofs of the two largest royal palaces, and also over the palace gateway. These figures however have a crest of seven feathers, similar to that which surmounts the crown of the Malagasy queens. One of the proverbs referring to this Falcon has already been quoted in speaking of the Kestrel (see preceding paragraph). Another says, "Falcon's eggs on the face of the cliff: that which screams out is its young."

Many of the Malagasy hawks and falcons are very handsome birds, beautifully marked with horizontal bars of alternate light and

dark colour on breast, belly, and tail. But perhaps the most handsome of them all is the Rayed Gymnogene, which is of a pearly grey colour barred with black, while on the tail and quill feathers are broad bands of pure white and intensely glossy black. This bird stands high, having very long legs, and with its crest of feathers on the crown and neck has much the appearance of a Secretary-bird, although really very different in internal structure. Its cry is a sort of scream, whence its name of *Fihika*, from *hika*, 'a scream of defiance.' Another name is *Fisiopaty*, lit. 'Whistler-for-the-dead.' It is also provincially called *Voronaomby*, 'Ox-bird.'

The Madagascar Cuckoo-Falcon takes one of its names, that of *Endrina*, 'Clownish,' from its stupid and awkward air; a name shared also by the Short-winged Buzzard; and this latter is also termed *Bèvòrotra*, 'Big-bellied,' and *Bòbaka*, 'Swelled,' from its heavy appearance. Of these birds however, M. Pollen says: "Their flight is majestic; they hover almost continually, mounting to a great height in the air, uttering their piercing cries and describing circles. The Fork-tailed Shrike has a special antipathy to this Buzzard, always chasing it when it perceives it." *Bèrinana*, i.e., 'Many-in-winter,' is another of its names. Their voracious tearing up of their prey is noticed in the names given to several of the Malagasy hawks, those in which the words *Firasa* or *Fandra*, the 'Tearer' or 'Divider,' or, more freely, the 'Butcher,' appear, either in these simple forms or combined with other words (from the root *rasa*, a word meaning the cutting up and dividing of oxen or other animals). This is the name of the Madagascar Sparrow-Hawk, which is also called *Vandraokibo*, 'Quail-eater.' By both of these names are also known the nearly allied birds, Morell's Sparrow-Hawk and Frances's Harrier-Hawk. This latter is also termed *Pariafody*, 'Disperser-of-cardinal-birds,' on which bird it largely feeds, and *Ampamàkalôhanikibo*, 'Quails'-head-breaker.' It is almost always seen in couples, the male and female birds together. *Fandra*salàmbo, 'Wild-boar-butcher,' is the name given to another species of Harrier-Hawk; and this (as well as *Fandra*) is also a provincial name of the Lesser Falcon or *Vòromahery* above mentioned. A Goshawk is called *Fandra*angàra, an obscure name as regards the latter portion of the word, but clear enough as to its first part. (Perhaps this name refers to its colour, from a root *ngàra*, 'of mixed colour'.)

Others again of these hawks are known by the name of *Hindry* or *Fanindry*, words either from a root *tsindry*, 'to press down,' or from another root *hindry*, 'to pounce on,' and probably referring to their pursuit of, and swooping down upon, their prey. These are names of the Short-winged Buzzard, and also of the Madagascar Cuckoo-Falcon (both already mentioned).

The long pinions and quill feathers of the Grey Hobby Falcon, projecting even beyond the tail, are noticed in its name of *Làvèlatra*, i.e., 'Long-wings.' These birds only appear in Madagascar in the rainy season, coming from Africa in pursuit of the clouds of locusts which frequently cross the Mozambique Channel, and on which they principally feed. Their flight is rapid, like that of a swallow, and they may be seen pursuing the locusts as the swallows do gnats. A *Sàkalàva* name of this bird is *Tsiàràra*, i.e., 'Not-found-in-the-dry-season;' and another

provincial name is *Fandrantsambàry*, i.e., 'Pruner (or cleaner)-of-rice,' because it feeds on the locusts, the plague of the rice-fields.

It will be seen that this group of rapacious birds presents good examples of the Malagasy power of giving striking and appropriate descriptive names to the living creatures of their country. Some of their names however, as *Pòmpa*, *Rehila*, *Tinòro*, etc., are still obscure; for explanation of these we must wait fuller knowledge of the provincial dialects of the native language.\*

2.—The Eagles are represented in Madagascar by two if not three species, of which the most common is the *Ankoàry* or *Hàuka*, the Fishing or Sea Eagle, which is found all along the western coast and on the numerous small islands off the north-west of the mainland. Captain W. F. W. Owen, R.N., gives a graphic account of the habits of this large and handsome bird: its keeping watch on a tree or cliff at the edge of the water, its lightning-like swoop into the sea after its finny prey, and its power of instantaneously arresting its downward flight (see ANNUAL XII. p. 513; where also M. Pollen's description of his obtaining a specimen of an eaglet is given). M. Grandidier says that a single pair of these eagles is found in very many of the innumerable small bays of the north-western coast, and of this they take exclusive possession, allowing no other eagle to enroach on their own preserves. He also says that as soon as the eaglets become old enough to provide for themselves, the parent birds persistently drive them away from the nest and from the neighbourhood. They feed principally on fish, catching adroitly those which appear at the surface. Compressing their wings, they dart headlong on their prey; and if this is too large to be carried in their talons, they then beat its head with strokes of their beak and tow it along, their wings serving as sails. The Northern Sakalava name of Ankoay applied to this Eagle appears to be an imitative one derived from its cry of *hoai*, *hoai*. It is probably peculiar to the island, although nearly allied to an African species.

Of the other Madagascar eagles (if there really are two others), much less is at present known. One of them, the Bare-legged or Harrier-Eagle has been formed into a distinct genus by Mr. R. Bowdler Sharpe. It appears to be very rare, only one example, shot by Mr. Crossley, in the Mangòro valley, being known. It is remarkable for its extreme shortness of wings and immoderate length of tail. But M. Grandidier doubts the existence (in Madagascar) of the other alleged species, the Crested or Hawk-Eagle (*Spizaetus occipitalis*), which has apparently been seen only once, by Messrs. Pollen and Van Dam, on the north-west coast opposite Nòsifàly, but was not captured.

3.—Six, if not seven, species of Owl are known in Madagascar, most of them being not very common; two however, the Scops Owl and the Barn Owl, are tolerably plentiful. The last mentioned appears to be exactly identical with the almost world-wide and well-known bird of that name. As among most other peoples, the Owl is regarded by the Malagasy as a bird of ill omen; they call it *Vòrondòlo*, i.e., 'Spirit-bird,' thinking it an embodiment of the spirits of the wicked; and when its startling screeching cry is heard in the night, they believe it to be a

\* Possibly *Tinoro* is from the root *tòro* (with infix *in*) and means the 'Crusher,' the 'Bruiser,' the 'Breaker.'

presage of misfortune to some one. There are numerous fables and stories about the Owl, illustrating the popular dread of and dislike to the bird. The Madagascar Long-eared Owl is termed *Vorombôzaka*, i.e. 'Bird-of-the-dry-grass,' from its hiding amongst the reeds and the long grass which grows so plentifully on the Imèrina downs. Another provincial name for the first of these birds is *Voronônkona* (or *Voronônkina*), possibly from a word (*onkénina*) meaning short and stout. Other names of the Madagascar owls, as *Tôrotôroka* and *Hànka*, appear to be descriptive of their cry. M. Grandidier says that the provincial name of the Scops Owl, *Atôroko*, means 'I am going to say,'\* and that some Malagasy consider it as a menace when they hear it. Like the owls in all other parts of the world, the Madagascar species are really public benefactors, by keeping down the number of rats and mice and other vermin; but their nocturnal habits, their large staring eyes, the 'uncanny' ear-like feathers of some, and especially their unearthly screech, have all combined to make them objects of dread. These and other popular notions, as well as observation as to the habits of the bird, are shown in the following proverbs, which probably mostly refer to the Barn Owl, but some also to the Scops species, thus: "Don't act like an Owl: sulky in another's house;" "A Wild-cat laughing at an Owl: the one that creeps ridicules the one that flies;"† "Bent down in grief and dejection, although nothing has befallen you, like an Owl;" "It is the Tufted-Stork (*Tâkatra*) that finishes a nest,‡ but it is the Owl who swells out and gives itself airs;" "An Owl appearing in the day-time, so all who see it swoop down on it."

Our notes on this Order may conclude with the following Malagasy fable referring to the Owl and other birds.

"Once upon a time, they say, all the birds of the air assembled and agreed to choose one of their number to be king and leader; but the Owl, it is said, did not come, for his mate chanced to be sitting just then. So all the birds agreed together that any one who should see the Owl, and did not kill him, should be expelled the community and be counted as an enemy. And that is why the Owl does not go about in the day-time, but only at night; for if any birds see him, they all set upon him to beat him.

"And the Falcon also, it is said, wanted to be king and appointed himself, but the rest did not agree to it; so he left all his companions and became their enemy. So if the Falcon sees any other bird, he carries it off forthwith, because it is his enemy; and so the birds, it is said, chose one of themselves as their king. And their choice fell on the Fork-tailed Shrike, because of his good behaviour, and his long crest, and also on account of his many-toned voice.

"And that, they say, is why this Shrike is considered by the people to be king of the birds."

\* More correctly, *tôro* means 'to point out, to direct;' or it might be from the obsolete form *tôro*, 'crushed, bruised' (see p. 71).

† Wild-cats (*Kàry*) are as much objects of dislike as owls, and are frequently classed with them by the Malagasy.

‡ The *Tâkatra* makes a very large and conspicuous nest.



APPENDIX TO CHAPTER II.—TABULAR ARRANGEMENT  
OF MADAGASCAR BIRDS ACCORDING TO THE NATURAL  
ORDERS.—PART I.



ORDER I.—ACCIPITRES: BIRDS OF PREY.

SUB-ORDER I.—FALCONES: FALCONS.

FAMILY I.—VULTURIDÆ: VULTURES. *None in Madagascar.*

FAMILY II.—FALCONIDÆ: FALCON-LIKE HAWKS.

SUB-FAMILY I.—POLYBORINÆ: CARACARAS. *None in Madagascar.*

SUB-FAMILY II.—ACCIPITRINÆ: LONG-LEGGED HAWKS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Rayed Gymnogene	<i>Polyboroides radiatus</i> , var. <i>MADAGASCARI- ENSIS</i> * (Scop.)	Fihiaika ( <i>Bs.</i> , <i>T.</i> , <i>Ba.</i> , <i>N.S.</i> , <i>N.B.</i> , <i>Tm.</i> )†	Vóronaomby ( <i>Bs.</i> , <i>T.</i> )
Long-legged Har- rier	<i>Circus Maillardi</i> , var. <i>MACROSCELES</i> (A. New- ton)	—	Fandrásalambo ( <i>Ba.</i> ), Fandràn- tsandambo ( <i>N.B.</i> )
Henst's Goshawk	<i>Astur HENSTII</i> (Schlegel)	—	Fandrásangàra ( <i>Bs.</i> )
France's Goshawk	<i>Astur (Scelopiscias)</i> <i>FRANCESII</i> , var. <i>typicus</i> (Smith)	—	Fandrása ( <i>Bs.</i> , <i>Ba.</i> , <i>T.</i> ), Vàn- draokibo ( <i>N.S.</i> ), Firàsy, Pa- riafôdy ( <i>N.B.</i> )
Morell's Goshawk	<i>Astur (NISOIDES)</i> MO- RELLI (Pollen)	—	Firàsy ( <i>N.B.</i> )
Madagascar Spar- row-Hawk	<i>Accipiter (Nisus) MADA- GASCARIENSIS</i> (Ver- reaux)	—	Vandraokibo ( <i>N.S.</i> ), Firàsy ( <i>N.B.</i> )

SUB-FAMILY III.—BUTEONIDÆ: BUZZARDS.

Short-winged Buz- zard	<i>Buteo BRACHYPTERUS</i> (Pelzeln)	Fanindry, Béri- rinina	Hindry ( <i>Bs.</i> , <i>T.</i> ), Pómpa ( <i>Ba.</i> ), Tinôro, Bobàky ( <i>N.S.</i> ), Endri- na ( <i>N.B.</i> ), Bévoróty ( <i>Tm.</i> )
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SUB-FAMILY IV.—AQUILINÆ: EAGLES.

Noisy Sea-Eagle	<i>Haliaeetus VOCIFEROI- DES</i> (Des Murs)	—	Ankoàý, Hánka ( <i>N.S.</i> )
Bare-legged or Harrier-Eagle	<i>EUTRIORCHIS ASTUR</i> (Sharpe)	—	—
Egyptian or Yel- low-billed Kite	<i>Milvus Korschun</i> , var. <i>aegyptius</i> (Gmelin)	Papàngo ( <i>Bs.</i> , <i>Ba.</i> , <i>T.</i> , <i>N.B.</i> , <i>N.S.</i> , <i>Tm.</i> )	Tsimalàho ( <i>Bs.</i> , <i>Ba.</i> ), Tsima- laoko
Andersson's Pern	<i>Machaeramphus Anders- sonii</i> (Gurney)	—	—

\* In these lists the genera and species or varieties of birds peculiar to Madagascar are shown by small capitals.

† The contractions of provincial names are as follows: *Bs.*, Bètsilèò; *Ba.*, Bàra; *T.*, Tanàla; *Tm.*, Taimôro; *Tnd.*, Tandróy; *N.B.*, North Bètsimisàraka; *N.S.*, North Sàkalàva; *Anth.*, Antankàrana.

## SUB-FAMILY V.—FALCONINÆ: TRUE FALCONS.\*

English Name	Scientific Name	Howa or General Name	Provincial Malagasy Names
Smaller Peregrine-Falcon	<i>Falco communis</i> , var. <i>minor</i> (Schlegel)	Vôromahéry (Bs. N.B., N.S.)	Fandràsa (Bs.), Fandràsalambo (T.), Fantio (Ba.), Tsipàra (Tm.)
Striped-bellied Falcon	<i>Falco (Hypotiorchis) zoniventris</i> (Peters)		
Grey Falcon or Hobby	<i>Falco concolor</i> (Temm.)	Lavèlatra	
Madagascar Cuckoo-Falcon	<i>Baza MADAGASCARIENSIS</i> (Smith)		Pômpa (Ba., T.), Hindry (T.), Endry (N.B.), Tinôro (N.S.)
Newton's Kestrel	<i>Tinnunculus NEWTONII</i> (Gurney)	Hitsikitsika	So, with slight variations, in all the dialects; e.g., Hitika, Ikitika, etc.

SUB-ORDER II.—PANDIONES: OSPREYS. *None in Madagascar.*

SUB-ORDER III.—STRIGES: OWLS.

## FAMILY I.—BUBONIDÆ: OWLS PROPER.

Cape Long-eared Owl	<i>Asio capensis</i> , var. <i>major</i> (Schlegel)		Hànka (Bs., Ba., T.), Hàngikànga (Tm.), Vôrombôzaka (S.)
Madagascar Long-eared Owl	<i>Asio MADAGASCARIENSIS</i> (Smith)		Vôronônkona (T.)
Hawk- or Hair-faced Owl	<i>Athene (Ninox) supercilialis</i> (Vieillot)	Tôrotôroka (Ba., N.S.)	Tôvetôveko (Antk.)
Madagascar Scops Owl	<i>Scops MANADENIS</i> (Quoy et Gaimard)	Tôrotôroka (T., N.B., N.S.)	Atôroko (S.)

## FAMILY II.—STRIGIDÆ: BARN OWLS.

Common Barn Owl	<i>Strix flammea</i> (Lin.)	Vôron dôlo	So in all other dialects.
Soumagne's Owl	<i>HELIODILUS SOUMAGNEI</i> (Grandid.)		

## CHAPTER III.—THE WOODPECKER-LIKE BIRDS.

The second Order or great division of Birds, according to Mr. R. Bowdler Sharpe's arrangement, comprises those termed Picariæ, which in some points resemble the Woodpeckers (*Picus*) in their habits. This division is again divided into two Sub-orders of (a) Climbers, and (b) Wide-gaping Birds. In the first of these, of the seven Families of which it is composed, only two have representatives in Madagascar, viz., the Parrots and the Cuckoos. Of the others, the Honey-guides, Plantain-eaters, Woodpeckers, Toucans and Barbets, none are found in the island.

I.—THE CLIMBERS.—Two species of Parrot and one Parrakeet are among the denizens of the Malagasy woods and plantations in almost every part of the country.

1.—These Parrots, the one dark-grey in colour, and the other slaty black, are both of sober plumage, with none of those brilliant tints which mark many species of Parrot in other parts of the tropics. But they are

\* M. Grandidier arranges all the Falconidæ under the following nine Families: (1) Aquilidæ, (2) Falconidæ, (3) Polyboroidæ, (4) Milvidæ, (5) Machæramphidæ, (6) Buteonidæ, (7) Circidæ, (8) Asturidæ, (9) Accipitrinæ; but, as remarked in the text, I have here followed Mr R. Bowdler Sharpe's system of classification.

both intelligent birds and, like their congeners, can be easily taught to speak a few words and to whistle a tune; they are therefore frequently kept as pets by the Malagasy. The grey species is found also in the Comoros and in Réunion, but the black one is peculiar to Madagascar.

The Grey Parrot, except in the breeding season, is found in small companies of from 6 to 8 individuals. Its food is rice, seeds, roots and wild fruit. A Malagasy proverb, whose 'moral' is to reprove a too easily-changing changeable disposition, speaks of "a male Parrot seeking fruit in the forest: he finds a luscious morsel here, but in an instant he is off to get another there." This bird flies high, but if one of them is shot or wounded, its companions will come with sharp cries of defiance of the hunter, as if to save their comrade. This Parrot, M. Grandidier says, is *idy* or sacred to one of the royal families of the Vêzo Sakalava, and he gives the following story as accounting for the origin of the veneration in which they hold it:—

"Lahimerisa, king of Fiherenana, told me that one of his ancestors was one day walking alone in one of his manioc plantations at some distance from the royal village, when he was surprised by a band of robbers on a marauding expedition from the Bâra country. They did not know the king, who had nothing in his appearance or dress to denote his rank. But seeing his thick chain of gold gleaming under the tangles of hair covered with grease and white clay, they took him unawares, speared him, and possessing themselves of the coveted prize, threw the body into a hastily dug grave, and decamped. How long he remained there no one knows; but he was not dead, only seriously wounded; and on recovering consciousness, and seeing nothing but darkness around him, and feeling the earth pressing heavily on his chest, he believed himself in the other world. He was in profound distress; when, suddenly, he seemed to hear shrill piercing cries, as if a flock of parrots had passed over his head. He listened attentively; the cries which met his ears were approaching nearer. Doubtless a babbling and restless crowd of them was perched on a neighbouring tree. 'But there are no parrots in the other world,' thought our hero, 'I am not dead!' He took courage, and freeing himself by a tremendous effort from the layer of earth which covered his body, he perceived the bright shining of the sun, in whose rays the parrots were sporting in the trees around him. Hope revived within him, and he made his way, not without difficulty, to his village, where after the needful care and nursing he eventually recovered strength. In thankfulness to the birds whose cries had roused him from his torpor and given him courage to free himself from his tomb, he solemnly vowed for himself and his descendants, to the latest generation, that they would never kill parrots."

The Grey Parrot is the larger of the two species, the black one being a third less in size. Both species are more terrestrial and less arboreal in their habits than most parrots, nor do they make much use of their claws to convey food to the mouth. These birds have many provincial names besides their common one of *Bolôky*, by which they are known both to the Hova and Betsiléo. Some of these names seem imitations of their harsh cry, while the meaning of others is obscure, except in so far as they denote their comparative size, as *Koërabe* and *Koërakely* (the large Koera, the small Koera), etc.

Some five years ago a paragraph went the round of the London papers telling of the recent "death of the oldest inhabitant of the Regent's Park Zoological Gardens." This was a specimen of the Black Parrot of Madagascar, which had been an inmate of the Gardens ever since July, 1830, only two years after they were opened. The bird had therefore been fifty-four years at Regent's Park; but how old he was when he arrived there is not known, except that he was described as "an adult bird." He appears to have died merely of old age.

The Madagascar Parrakeet is a lively and brightly coloured little bird, and is found in considerable numbers, in the outskirts of the woods and near the cultivated districts, all over the island. They go in large flocks, often of as many as a hundred together, and sometimes do considerable damage to the rice-crops. They are however very excellent eating, and are often snared with a kind of bird-lime. As denoted in their English name, they have greyish-white heads, but the body and wings are bright green, the male bird having the lighter tint spreading also over neck and breast. They are often taken alive to Mauritius and Réunion and sometimes to Europe. This Madagascar species is hardly to be distinguished from those found in the Mascarene Islands and in parts of East Africa. The two sexes of this Parrakeet show great affection for each other, the pair sitting close together on their perch, from which habit they are often called Love-birds (*Agapornis*).

One of the native names of this Parrakeet, *Karaoka*, is probably descriptive of its cry; while another, *Masésy*, means 'degenerated,' or 'become small,' apparently because it is considered as a dwarf species of parrot. This idea also appears in the latter portion of their Hova name *Sàrivàzo* or *Sàrivàza*, *Vàza* being a name for the two parrots also, and probably is identical with the root *vàza*, 'loud-voiced,' 'clamorous.'

2.—The second Family of the first Sub-order of the Picariæ, that of the Cuckoos, contains in Madagascar no less than 14 species and varieties. Of these, 12 belong to a genus peculiar to the island, and are among those numerous birds which give a distinct and special character to its Avi-fauna. These are the Couas (from a native name *Kôa*, pronounced *kooa*), which are large handsomely coloured birds; they are remarkable for their short and obtusely pointed wings, loosely barbed feathers, long stiff tail, long thighs covered with large scales, and a fleshy caruncle round the eyes. These 12 species and varieties, says M. Grandidier, are strictly local in their habitat, most of them being confined to one district, out of which they are never found; and those which live in the damp forests on the eastern side of the island are very distinct from those which inhabit the dry and sandy plains on the western side. This is shown clearly in a map which M. Grandidier gives of the distribution of the various species. These differ from each other not only in colouring, but also in the proportions of the different parts of their bodies—wings, tail, beak, legs, etc.

Five species of Coua\* inhabit the large forests, or at least the wooded regions, where they are found jumping from branch to branch in search of their food, which consists of insects and especially of land molluscs. In their stomachs there is usually found a fetid gelatinous mass of matter,

\* *C. Reynaudii*, *C. cristata*, *C. pyropygia*, *C. Verreauxii*, and *C. cerulea*.

which comes from the slugs and snails of which these birds are very fond. These five species are true climbers. The other seven species, on the contrary, rarely perch, and live in the plains, where they run on the ground, as well as under the trees. These Couas feed chiefly on worms and insects and, at certain seasons, on seeds. All the Couas, whether climbers or runners, pillage mercilessly other birds' nests at the time of incubation, and sometimes even attack small adult birds. They are unsociable, not one of them living in flocks, for they are almost always met singly, except at the breeding season. There is no difference of colour between the sexes. Their flight is heavy and awkward, in fact the Couas do not make much use of their wings unless they are obliged.

The climbing Couas go from tree to tree, cocking their tails, and making the solitudes of the forest resound with their short sharp cry. Their habits remind one of the Magpie, but they do not, like that bird, seek the society of man, although they are not shy. They nest in high trees.

The running Couas pass the greater part of their life on the ground, flying very rarely. They are more distrustful than their cousins the climbers, and one never hardly hears their voice. Their tails, which are much more slender than those of the climbers, trail on the ground and are therefore always much worn.

The Crested Coua is the only species of the genus which is found all over Madagascar, at least wherever there are woods. It has a variety of names, one of which, *Tivôse*, says M. Grandidier, means 'Crested,' or 'Tufted,' and refers to its appearance; while others, as *Ambosônga*, 'That-which-climbs,' and *Antisôma*, 'That-which-loves-to-play,' refer to its habits.

The Blue Coua is very common on the east and north-west coasts. A wounded one was seen to use its beak like a parrot in climbing trees. Its cry is said to resemble the words *Muriha* and *Tiso*, which are two of its provincial names.

Verreaux's Coua is very rare, being only found at the extreme southerly point of the island. Serres's Coua is also rare, and is only met with on parts of the north-east coast; and so also with Delalande's Coua; this bird goes from rock to rock seeking the large land-shells which form its principal food. These molluscs it takes in its beak and breaks the shell by striking them on a stone. From this habit come its names of *Famàkijifotra*, 'Snail-breaker,' and *Famàkiakôra*, 'Shell-breaker.'

The two other species of Cuckoo found in Madagascar are much more common than are most of the Couas, and are found all over the forest regions of the island.

The *Kankàfotra*, the Grey-headed (or Roche's) Cuckoo, comes up into the upper plateaux of the interior as the warm season approaches (as also do some of the Rollers and other birds), and its monotonous but not unpleasing cry of *kow-kow*, *kow-kow*, may be heard in all parts of the woods, or indeed wherever there are trees, all day long. The Malagasy make its arrival a signal for clearing their ground for planting the later crop of rice; in some native *Hain-tèny*, or Oratorical Adornments, the *Kankàfotra* is said to *manôva ny taona*, i.e., 'to change,' or rather, 'to announce the change, of the year.' Its various names seem to be all more or less descriptive of its note, like the name of our English species of Cuckoo. It is a solitary and shy bird, never seen but alone except

in the pairing season ; it has a sober livery of grey and brown tints.

The remaining bird of this Family, the *Tolôho* or Madagascar Lark-heeled Cuckoo, is of a dark slaty colour, with rufous wings and extremely long tail. It does not come up into the higher regions of the island, but is very common in the coast forests and plains. Its name of *Tolôho* is imitative of its mellow flute-like whistle, which consists of several notes running down the scale. M. Grandidier says it may be seen about the villages leaping, or rather gliding, from branch to branch in the clumps of bamboos or in the spiny bushes, cocking its tail and expanding its short wings. It seeks damp and marshy places by rivers, where it finds its food of insects, larvæ and molluscs. But it also feeds on small birds and quadrupeds. Its flight is heavy, but it is an indefatigable climber, its thick plumage serving as armour against the spiny branches of the shrubs.

This Cuckoo is considered a sacred bird by one of the principal tribes of Mënabé (W. coast). M. Grandidier says that having on one occasion shot one of these birds at Tsimanandrafôzana, he was obliged, in order not to grieve the family, to leave the body of the bird, which was immediately reverently buried. The reason of the extreme respect in which these Sâkalava hold the *Tolôho* is as follows : "One of their ancestors, who was fearlessly swimming across the River Tsijobônina, was caught on the way by a crocodile. It is well known that these fearful reptiles do not devour their prey on the shore, but carry it to their lurking-places under or close to the water, so that it may become half putrid before being eaten there. Our hero was carried, quite senseless, to a large hole in the bank of the stream, which served as the habitual retreat of the monster, and which the ebbing tide had left partly dry. It was from this fortunate chance that the victim's head was left just above the surface of the water. Suddenly he was roused from his torpor by the repeated cry of a *Tolôho*. Now we know, from what has been already said of the habits of this Cuckoo, that it chooses damp places, and hops about from bush to bush on the river banks ; it was then very natural that the loud mellow notes of the *Tolôho* should reach the ears of a man who was lying only a slight depth under ground. Starting out his lethargy, it was not long before he comprehended that he was not buried very deeply, since the notes of the bird could be recognized ; and so, without waiting for the return of the reptile, which was waiting patiently at the entrance of the cave, he used his hands and nails with such effect that in a little time he saw daylight. He was saved. In recognition of the service, all unconscious and involuntary as it was, which the bird had rendered to their ancestor, his children and grandchildren vowed that neither they nor their descendants would ever kill a *Tolôho* ; and so that is why the Paris Museum has one specimen less of the *Centropus madagascariensis*."

In Malagasy folk-lore there is an amusing fable about this bird and the *Tâkatra* or Brown Stork,\* in which the former is described as being invited to a feast at the nest of the latter ; but he disgracefully repays the hospitality of the *Tâkatra* by turning him out of house and home and taking possession of it himself. From this fable (which probably embodies some facts as to these birds), it would appear that this Cuckoo has

\* See *Folk-lore and Folk-tales of Madagascar* ; Antananarivo : pp. 113-117.

something of the habits of its European cousin in making use of other birds' nests.\* Perhaps this habit is also referred to in one of its provincial names of *Abilimbòrona*, i.e., 'Base (or Slavish)-bird.'

II.—THE WIDE-GAPING BIRDS.—The second Sub-order of the icariæ, that of the Fissirostres or Wide-gaping Birds, includes, according to Mr. R. B. Sharpe, 12 Families, half of which are represented in Madagascar. These are the Kingfishers, Hoopoes, Bee-eaters, Rollers, Hoatsuckers and Swifts. For the other six, the Jacamars, Puff-birds, Hornbills, Motmots, Trogons and Humming-birds, we must go to other parts of the world.

1.—The Kingfishers are represented by two species, the first of which is a lovely purplish blue, with yellow and buff breast and belly, is very common wherever water is to be found. With short blunt tail and long beak it may be seen perched on the *Zozdro* or other aquatic plants, or darting over the streams or marshes, flying in a curious jerking manner, like a flash of purple light, pursuing the insects which form its food. In colouring, this Kingfisher is not very unlike our English species.

Its very general name of *Vintsy* does not throw much light on the habits or peculiarities of this beautiful little Kingfisher. By some tribes it is also called *Vòrombòla*, 'Money (or Silver)-bird;' and some native superstitions have become connected with it; thus we find it said that, 'The Vintsy and the Black moth are dead people who have been changed into animals. The common people reverence them and say that they are their ancestors.'†

The other Madagascar species of this Family, the Rose-cheeked Kingfisher, is a little bird in a livery of bright yellowish red, the throat and under part of the body being white. Its tail and wings are almost comically short, and it is much less common than its purple cousin, being only found in certain parts of the island, and in the woods, as its name of *Vintsiàla* ('forest' *Vintsy*) denotes. By the Taimòro its name is personified by the prefix *Ra-*, *Ravintsy*.

2.—The single species of Hoopoe found in Madagascar is, like others of the same genus found in the Old World, a handsome bird, both from its beautiful colouring and its prominent crest of feathers. But it does not appear to differ in any marked degree in habits from our European Hoopoe, nor is any thing further known of it to require a longer notice here.

3.—The Madagascar Bee-eater is one of the most beautiful birds found in the island, both in elegance of form, and from its bright colouring; it is also one of the largest forest birds, standing nearly a foot high. It has a very long curved beak and an extremely long tail, with two quill-feathers extending beyond the others; its colours are various shades of green. Its name of *Tsikirioka*, found with slight variations in several dialects, is no doubt imitative of its cry of *kirìò, kirìò*. M. Pollen mentions finding a number of the nests of this bird, excavated about a foot deep in a sand-bank, on the margin of the River Ambasòana.

\* I am informed by a native friend that the Kankáfotra does lay its eggs in the nests of other birds.

† See *Madagasy Folk-lore*; Antananarivo: p. 292.

4.—Coming to the next Family of the Sub-order, that of the Rollers we meet with five species of the most interesting and curious of all the birds found in Madagascar. These belong to the kind called Ground Rollers, which live entirely on the ground, and only come out at dusk. Their flight is said by M. Grandidier to be very weak, so that the birds are never found above the lowest branches. They are rather local in their habitat, but where they do occur seem to be not uncommon. The *Vorondrèo*, or Kiròmbô Roller, has at first sight much the appearance of a Cuckoo, of which family it was for many years considered to be a member. The head is extremely large in this bird, and the region of the nostrils densely plumed. M. Pollen says: "The natives of the north-west of Madagascar give this bird the name of *Kiròmbô*. It has the curious habit of hovering in the air and uttering a very loud note, striking its wings against the body as it calls. This cry, resembling the syllables *tu-hou, tu-hou, tu-hou*, goes on increasing in strength. Nowhere have we seen this bird in greater numbers than in the forests of the south-west of Mayotta. The racket they make throughout the day is truly wearisome. Although very active as regards voice, these birds are lazy and stupid. Immediately they perch on the branch of a tree, they remain, so to say, immovable and in a perpendicular position, so that it is very easy to see and to shoot them. When seen in this position they look just like birds impaled on the branches. I suppose they must live in polyandry, because one always sees three times as many males as females; I have often met three males in company with one female, and they have all allowed themselves to be killed one after another. In fact when one is killed, the others do not fly away, but content themselves with merely moving from one branch to another. These birds live principally on grasshoppers, but they also devour chameleons and lizards. When they cry they puff out the throat, so that this portion of the body has the appearance of a pendant bag. The *Vorondrèo* plays a great part in the chants and religious recitations of the Malagasy."

These five species of Ground Roller are all handsome birds; the colouring of the one just described (the Kiròmbô Roller or *Vorondrèo*) is perhaps the 'quietest' of the five, having a good deal of slaty-grey on head and breast. But both it and its companions have shades of 'shot' colour, purple and green, or red and green, as looked at in different lights. The others exhibit larger masses of bright colour; the Violet Roller having, as its name denotes, a good deal of violet or purple tinting. Four of them are rather large birds, but the Scaly Ground Roller is small, with a ball-like head of rufous brown, and a curious 'bib' or collar of black and white feathers, reminding one of the strange neck and throat appendages of some of the Paradise-birds.

Certain native names for these birds, show, as in other cases, some native notions as to their habits and peculiarities. Thus, the *Vorondrèo* is also called *Vorontsio*, probably the 'Whistling bird'; Crossley's Ground Roller is called *Vorontrandraka*, 'Hedgehog-bird'; the Pitta-like Roller is called *Sakôka* and *Tsikôko*, probably from *sakôko*, 'dejection,' 'melancholy'; and also *Avôka*, perhaps from *vôkaka*, 'lifted from the ground'; and also *Rèniangaly*, which literally means 'Mother (or source)-of-capriciousness.' The Violet Roller is known by several names which are variations of the word *Harakàraka*, probably from the root *karakàra*, meaning



minute investigation,' and so referring to the habits of the bird when arching for its food. It is also called *Voronkaka*, which would appear mean 'Enemy,' although this name may be only imitative of its cry.

As remarked by M. Pollen (in words just quoted), the *Vòrondrèò* is frequently referred to in the folk-lore and folk-tales of the Malagasy. In *AN-TAL III.* p. 110 (*Reprint*, p. 369), a translation was given of one of the series of tales referring to a strange monster called *Itrímobè*, and in this the *Vòrondrèò* appears and delivers the heroine from danger, as follows:—  
 "After that a *Rèò* bird came, repeating its cry, '*Rèò, rèò, rèò*,' which, when *Ifàra* saw, she called to thus:—

'O yonder *Reo*, O yonder *Reo* !  
 Take me to father's well,  
 And I will smooth thy tail."

'*Reo, reo, reo*,' said the bird, 'come, let me carry you, my lass, for I feel or the sorrowful.' So the bird took her away and placed her on a tree just above the well of her father and mother."\*

The *Vòrondrèò* also figures to advantage in the following piece, entitled "Don't send a fool on an errand:—"

"The Weaver-finch (*Tsikirity*) longs for, and the Sun-bird (*Soy*), is sorrowful,—but don't send the Warbler (*Fitatra*), for when he goes into the plantation, he will be off. The Weaver-finch longs for, and the Sun-bird is sorrowful,—but don't send the Cardinal-bird (*Fòdy*), for when he meets a friend, he will forget all about it. The Weaver-finch longs for, and the Sun-bird is sorrowful,—so send the *Vòrondrèò*, for he will both chirp and deliver his message."†

5.—The fifth Family of the Wide-gaping Birds found in Madagascar, that of the Goatsuckers—from which indeed the Sub-order takes its name—is represented here by two species. Of the first of these called *Fandikalàlana*, i.e., 'Crosser-of-the-path,' M. Pollen says that it is pretty common on the north-west coast. After sunset these birds leave the recesses of the forest, where they rest during the day in the grass, and begin a rapid flight along the border of the woods, as well over the surface of the water. They have the habit of sometimes rising, from a slight elevation above the ground, straight into the air; then they let themselves suddenly fall, to resume their ordinary mode of flight. They feed exclusively on nocturnal insects, chiefly moths and beetles. The note of these birds is monotonous, resembling the syllables *tar-tar-ta-ro*, from which come the names of *Tatàro* and *Tartàrolèpeka* given to them by the northern *Sàkalàva*.

The other species of Goatsucker has apparently the same habit of reposing during the day as its relative, for it seems only known by the name of *Matòriàndro*, i.e., 'Day-sleeper,' in three or four dialects. Both birds are beautifully mottled with various shades of brown, no doubt a protective resemblance, corresponding with the colour of their surroundings.

6.—The last of the six Families of this Sub-order found in Madagascar, viz. the Swifts, comprises three species of these attractive and useful

\* See also, "The Oratory, Songs, Legends and Folk-tales of the Malagasy," in *The Folk-lore Journal*; vol. I. (1863) p. 236.

† See *Specimens of Malagasy Folk-lore*; p. 30.

birds. These Swifts do not differ much from those of Europe, either in habits or appearance. M. Pollen says that they catch daily thousands of mosquitoes, and that he has observed them in large numbers perched on the large-foliaged trees. Their flight is extremely rapid, like that of an arrow from a bow; and from this comes their name of *Sidin-tsidina*, 'the Flier,' *par excellence*. (Or possibly the verb comes from the bird's name.) The Smaller Swift has extremely long pointed wings and a forked tail; but Grandidier's Swift has a square tail. While the Goatsuckers are known to the natives as nocturnal birds, the Swifts, on the contrary, are recognized as diurnal in their habits, and so are called *Fitiliandro*, 'Day-watchman,' *Voronandro*, 'Day-bird,' and *Manaviandro*, 'Day-bat.'

One species (*Collocalia francica*) is nearly allied to the Edible-nest-building Swiftlet of the East Indies. Its nest however is not made chiefly of the glutinous secretion from the bird's saliva, but largely of a species of grey lichen (*Usnea*) which grows abundantly on the trees, cemented together with the gelatine from the bird's mouth. In Réunion the nests are bought by Chinese traders, but they are much inferior to those of the East Indian species. These Swiftlets build their nests crowded together on the face of steep and almost inaccessible cliffs, so that it is very difficult and dangerous to obtain them. M. Pollen observes that in the nests both eggs and young birds in all stages of development may be found. One of this bird's names is *Voromaola*, 'Frolicksome-bird' (or possibly 'Mad-bird'), probably from its wild dashing flight as it darts after its insect prey.

(To be continued.)

JAMES SIBREE, JUN. (ED.)

## APPENDIX TO CHAPTER III.—TABULAR ARRANGEMENT OF MADAGASCAR BIRDS.—PART II.



### ORDER II.—PICARLÆ: WOODPECKER-LIKE BIRDS.

#### SUB-ORDER I.—ZYGODACTYLÆ: CLIMBING BIRDS.

##### FAMILY I.—PSITTACI: PARROTS.

SUB-FAMILY I.—CAMPTOLOPHINÆ: COCKATOOS. *None in Madagascar.*

SUB-FAMILY II.—ANDROGLOSSINÆ: FLESHY-TONGUED PARROTS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Grey Parrot	CORACOPSIS OBSCURA (Bechstein)	Bolöky (Bs.)	Sihötsa, Vâza (Ba.), Kavöky, Ampöma (T.), Koërabé, Vâza (N.S.), Boëzabe (N.B.)
Black Parrot	CORACOPSIS NIGRA (L.)	Bolöky (Bs.)	Sihötsa, Vâza (Ba.), Kavöky, Ampöma (T.), Vâza, Kakio (N.S.), Koërakely (S.), Boëzantsikötra, Boëza (Bm.)

SUB-FAMILY III.—CONURINÆ: MACAWS. *None in Madagascar.*

## SUB-FAMILY IV.—PLATYCERCINÆ: PARRAKEETS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Grey-headed Parakeet (or Love-bird)	<i>Psittacula</i> MADAGASCARIENSIS (Brisson)	Sàrivàzo (Bs., N.S.)	Kitrèoka (Ba., T.), Sàravànga (Ba., T.), Karòko (N.S., N.B.), Sàravòsa (S.), Masèsy

SUB-FAMILY V.—STRIGOPINÆ: OWL-PARROTS. *None in Madagascar.*SUB-FAMILY VI.—TRICHOGLOSSINÆ: BRUSH-TONGUED PARROTS. *Do.*

## FAMILY II.—CUCULIDÆ: CUCKOOS.

Grey-headed Cuckoo	<i>Cuculus poliocephalus</i> , var. ROCHII (Hartl.)	Kànkàfotra (Bs., T., Ba., N.B.)	Taotaonkàfa (N.S.), Bótokón-kóna (Antk.)
Madagascar Lark-heeled Cuckoo	<i>Centropus</i> MADAGASCARIENSIS (Brisson) or TOLOU	Tolòho; so also in almost all the dialects,	Abilimbòrona (W.Co.), Mitsóly (Ba.), Mònjo (N.B.)
Reynaud's Coua-Cuckoo	COUA REYNAUDII (Puch.)	-----	Kóa (Bm.), Taitòhaka (Bs., Ba., T.), Fandikalàlana (T.)
Crested Coua-Cuckoo (type)	COUACRISTATA (typica) (L.)	-----	Tivóka (N.S.), Tivòtse (S.E. Co.), Ambosànga (N.B.), Antisóma
Tawny-rumped Crested Coua-Cuckoo	COUA CRISTATA, var. PYRROPYGALA (Alf. Grandid.)	-----	Tsilòko, Tivóka (S.)
Verreaux's Coua-Cuckoo	COUA VERREAUXII (Grand.)	-----	Tivóka (S.Co.)
Blue Coua-Cuckoo	COUA CERULEA (L.)	-----	Mariha (N.E.), Tésò (S.E.)
Serres' Coua-Cuckoo	COUA SERRIANA (Puch.)	-----	Kóa (Bm.)
Delalande's Coua-Cuckoo	COUA DELALANDEI (Temm.)	-----	Famàkisifotra, Famàkiakòra (T., Bm.)
Giant Coua-Cuckoo	COUA GIGAS (Boddaert)	-----	Eoka (or Heokè, S.)
Red-capped Coua-Cuckoo (type)	COUA RUFICEPS (typicus) (Grey)	-----	Hàliotsa (or Aliòtsa, S.)
Olive-capped Coua-Cuckoo	COUA RUFICEPS, var. OLIVACEICEPS (Sharpe)	-----	Aliòtsa (N.S.)
Running Coua-Cuckoo	COUA CURSOR (Grand.)	-----	Aliòtsa (S.Co.)
Coquerel's Coua-Cuckoo	COUA* COQUERELII (Grand.)	-----	Lètsa, Akòka (S.)

FAMILY III.—INDICATORIDÆ: HONEY-GUIDES. *None in Madagascar.*FAMILY IV.—MUSOPHAGIDÆ: PLANTAIN-EATERS. *do. do.*FAMILY V.—PICIDÆ; WOODPECKERS. *do. do.*FAMILY VI.—RHAMPHASTIDÆ: TOUCANS. *do. do.*FAMILY VII. CAPITONIDÆ: BARBETS. *do. do.*

## SUB-ORDER II.—FISSIROSTRES: WIDE-GAPING BIRDS.

FAMILY I.—GALBULIDÆ: JACAMARS. *None in Madagascar.*FAMILY II.—BUCCONIDÆ; PUFF-BIRDS. *do. do.*

\* All these Couas, except Delalande's, to which he gives the generic name of *Cochlothræus*, are called by Mr. R. Bowdler Sharpe *Sericosomus*, and not *Coua*.

## FAMILY III.—ALCEDINIDÆ: KINGFISHERS.

English Name	Scientific Name	How or General Name	Provincial Malagasy Names
Crested Kingfisher	<i>Corythornis</i> CRISTATA (L.)	Vintsy (Tan., N. B., N.S.)	Vintsirano (Bs., Ba., T.), Voro-mbôla (Bs., Tm.), Béntsv (N.S.), Litotra (Ba.)
Rose-checked Kingfisher	<i>Ispidina</i> MADAGASCARIENSIS (Briss.)	—————	Vintsiâla in almost all dialects, Ravintsv (Tm.)

## FAMILY IV.—BUCEROTIDÆ: HORNBILLS. None in Madagascar.

## FAMILY V.—UPUPIDÆ: HOOPOES.

Fringed Hoopoe	<i>Upupa</i> MARGINATA (Pct.)	—————	Takadara (Bs., Ba.), Berao (N.S.)
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## FAMILY VI.—MEROPIDÆ: BEE-EATERS.

Madagascar Bee-eater	<i>Merops superciliosus</i> , var. MADAGASCARIENSIS (L.)	Tsikirioka, nearly the same in many dialects.	Kiriokio (N.S.), Kirinkirio (N. B.), Sikirikiriko (Antk.)
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## FAMILY VII.—MOMOTIDÆ: MOTMOTS. None in Madagascar.

## FAMILY VIII.—CORACIADÆ: ROLLERS.

Kirombo Roller	BRACHYPTERACIAS LEPTOSOMUS (Lass.)	Võrondrêo	Kirômbô (S.), Võrontsiô (Bm.)
Scaly Ground-Roller	BRACHYPTERACIAS (GEOBIASTES) SQUAMIGERUS (Lafr.)	—————	—————
Crossley's Ground-Roller	BRACHYPTERACIAS (ATELORNIS) CROSSLEYI (Sharpe)	—————	Võrontrandraka (T.)
Pitta-like Ground-Roller	BRACHYPTERACIAS (ATELORNIS) PITTOIDES (Lafr.)	Sakôka (Ba., T.)	Avôka (Bs.), Rëniangaly (N.B.), Tsikôke (Tm.)
Broad-billed or Violet Roller	EURYSTOMUS MADAGASCARIENSIS (L.)	Maorâra	Harakâraka (Bs., T., Tm.), Tsi-râraka (Bs., Ba., N.S.), Fiti-vâratsa (N.S.) Võronkaka

## FAMILY IX.—TROGONIDÆ: TROGONS. None in Madagascar.

## FAMILY X.—CAPRIMULGIDÆ: GOATSUCKERS.

Madagascar Goatsucker	<i>Caprimulgus</i> MADAGASCARIENSIS (Sganzin)	Fandikalâlana	Tandrônisony (Bs.), Tatâro (Ba., T., N.S., N.B., Tm.)
A Goatsucker	<i>Caprimulgus enarratus</i> (Gray)	Matôriandro (Bs. Ba., Tan.)	—————

## FAMILY XI.—CYPSELIDÆ: SWIFTS.

Little Swift	<i>Cypselus parvus</i> (GRACILIS) (Sharpe)	Sidintsidina (T.)	Fitiliandro (N.S.), Manâviandro (N.B.), Võronandro (Antk.)
Edible-nest-building Swiftlet	<i>Collocalia francica</i> (Gm.)	Sidintsidina	Firetingakely (Bs.), Võromaola (T.)
Grandidier's Swift	<i>Chaetura</i> (Cypselus) GRANDIDIERI (Verr.)	—————	Fitiliandro (N.S.), Manâviandro (N.B.), Võronandro (Antk.)

## FAMILY XII.—TROCHILIDÆ: HUMMING-BIRDS. None in Madagascar.



## THE FIVE SENSES AMONG THE MALAGASY:

## NATIVE WORDS FOR COLOUR, SCENT, SOUND, ETC.

IT would be impossible for a European without a great deal of research and minute enquiry to give anything like an exhaustive explanation of the peculiar ideas of the Malagasy with regard to the various sensations of colour, sound, scent, etc., and to assign the exact meanings of the innumerable terms and synonyms used to describe these sensations; though to a student of the language such an enquiry would, I have no doubt, prove sufficiently interesting. All I propose however in the present paper is to make a few brief notes as to the more obvious points of general interest connected with this subject.

And first, one fact, which must often have forced itself on the notice of all who have had much to do in the way of teaching, or in translating or writing books in Malagasy, strikes us at the outset: this is the lack of general or abstract terms in the language. I do not refer to abstract nouns, for in almost every case where an idea is embodied in the form of a verb or adjective, it is possible to frame a corresponding abstract noun. But the difficulty one experiences is in the frequent total absence of the concept corresponding to what exists in the mind of a European, and one has usually in such cases to be content with an awkward periphrasis, or, in the case of a word likely to be in frequent requisition, one has to clothe it in a Malagasy garb, and leave it to take its chance as to whether it will hold its own among purely native words, or not.

Our subject affords many illustrations of this lack of abstract terms in Malagasy; thus there are no distinct words for *sense* or for *colour* (as distinct from surface markings or texture); the word *feo* again has to do duty for sound, noise, voice, key, tone, pitch, note, timbre, rhythm, etc., so that it has been inevitable in teaching music to introduce many of these words.

While there is on the one hand this distressing paucity in some directions, there is on the other hand an almost equally embarrassing redundancy of minute distinctions of individual sensations; thus while the word *feo* has the vague meaning just referred to, of words describing individual noises, sounds, etc., I have a collection of over two hundred! It might be thought by some that this superabundance of synonyms was a proof of the richness and high state of advancement of the language, but most of us will be more inclined to agree with Archdeacon Farrar, who, in his work on *Language and Languages*, when speaking of certain South African, Malayan, and other tongues, remarks: "This apparent wealth of synonyms and grammatical forms is chiefly due to the *hopeless poverty of the power of abstraction*." And again: "The 'transnormal' character of these tongues only proves that they are the work of minds incapable of all subtle analysis; and, following in one single direction in erroneous and partial line of development, when the mind has nothing else to work upon, it will expend its energy in a lumbering and bizarre multiplicity of linguistic expedients, and by richness of expression will try to make up for poverty of thought." Malagasy is however not nearly so bad in this respect as some languages, where "jewels fourteen syllables long are required to express the commonest abstractions," and

where, as in the language of certain aboriginal tribes, no numeral beyond three is found, the word for this, in one instance, being of such a fearful length that it is no wonder, as one writer remarks, that the numerical system of this tribe stopped short at that point!

There appears to be no word in Malagasy exactly corresponding to our word 'perceive,' or take cognizance of by the senses, the words *mahatsiàro* and *mandrè* being the nearest equivalents. But the former is seldom if ever used of seeing, hearing and smelling, and means also to recollect, or to awaken from sleep or unconsciousness; it often has a vague meaning of 'being conscious of,' but must be made definite by some qualifying word, as *mahatsiaro fanaintainana*, to feel pain; *mahatsiaro fy*, to be conscious of a sweet or delicious taste. *Mandre*, on the other hand, is strictly only used of hearing, but may also be applied to smelling, tasting, and even feeling (cf. 'feel a smell,' in the Yorkshire dialect).

Of perceptions of analogies between the ideas derived from various senses, as, for instance, where we in English speak of a colour as 'loud,' a sound as 'sweet,' tones in a picture as 'warm' and 'cold,' there appear to be few examples in Malagasy; the most noteworthy perhaps is the use of the word *manga*. This, when referring to colour, means 'blue,' but it is also the ordinary word for 'sweet,' as applied to sounds, and may also be used almost as a synonym for *mahafinaritra*, 'pleasant', as when palanquin bearers, after toiling up a steep hill in the glare of the sun, will, on reaching the summit and catching the cool breeze, exclaim, "*Manga làhy isàny* !" ("Oh! that is sweet.")

We will now briefly notice a few points of interest in connection with the senses one by one, commencing with *Sight*.

The Malagasy, in common with all tribes who spend most of their time in the open air, have good eyesight; cases of short sight are comparatively rare, though, since the general introduction of books, and possibly, in part, in consequence of the extending practice of smoking tobacco, this defect of vision appears to be on the increase.

The Malagasy, when taught, develop a correct eye and good taste for form and colour, though the inability of the ordinary native carpenter or bricklayer to see when a thing is 'out of the straight' is aggravating. The remark of a missionary at present engaged in superintending extensive building operations, and whose "righteous soul is vexed from day to day" by the incapacity of the workpeople, has a good deal of point in it: "If it is so hard for these people to understand a material straight line, how can one wonder that they should have so little realization of moral rectitude!"

As before remarked, the Malagasy have no word for abstract colour, *sòra-jàvatra* applying rather to surface markings, as a pattern in lines or monochrome, the root being the same as that used for 'writing'; *volon-jàvatra* again suggests texture of surface, or colour as referring to a growth of hair, feathers, or vegetation. While there is thus strictly no word for colour, the Malagasy are apparently well able to see colour, and to distinguish different tints and shades. Though I have repeatedly tested for colour-blindness in large companies of Malagasy with a test diagram, I have never found a single instance of this defect of vision; and the idea that such a peculiarity should exist seems entirely novel to

em. It is possible however that strict and careful experiment with individuals might reveal some cases.

Although the Malagasy have thus no word for abstract colour, one might complain of any lack of names for individual colours and shades.

Words expressing colours and surface markings or allied appearances have a list of over one hundred. Of the names of the three primaries, ingenious derivation makes *mèna*, red, to come from *hèna*, meat, which it might well do, as far as the grammatical form is concerned, though the existence of cognate forms in the allied languages renders it likely.\* *Vòny*, yellow, is possibly the same word as *vony*, a flower, which gives rise to the common adverb and preposition, *ambony*, above, lit. 'the flower of,' though one would think that this derivation would require that the majority of flowering plants known to the natives at the time of the specialization of this word to describe a yellow colour should have had yellow blossoms, but one does not see how the facts would bear this out. The word *manga*, which is the commonly accepted equivalent of blue, is probably from a simpler form, *anga*, which appears in *ngana* (blue), *mangana* (discoloured, as of a bruise, blue). This word *ngana* is given in the Dictionary as meaning "blue silk," but it is, I understand, in the country districts the word for blue, and is much more commonly used than *manga*.

In addition to these simple names for the primary colours, there are a considerable number of other words denoting various shades and modifications of these. Thus, among reds, we have *ràn' ombilaky* (bullock's blood colour), *vòlom-bôahangy* (coral colour), *jàky* (scarlet), *mèna mangarakàtraka* (brilliant crimson), *mavokely* (pink), *vònim-pèso* (peach colour), *mèna hòngotra* (sandy coloured, as applied to hair.)

For blues again, we have *vòlom' aika* (indigo), *vòlom-bintsy* (kingfisher colour), *vòlon-dànitra* (deep sky-blue), *vòdilànitra* (light sky-blue, lit. horizon-colour), *vòlom-piraka* (lead blue), *vòmitsiàzonàfo* (lit. 'yellow untouched by fire' = lilac!).

Distinct names for the three secondary colours are found in Malagasy, covering much the same ground as our purple, orange and green. A note as to the probable origin of *vòlom-parasy* (purple, lit. 'flea-colour') given in the ANNUAL for 1885, says, "It seems probable that the word *vòlom-parasy* is a translation of the French word *puce*, the flea. And the distinguished author of the idea of a similarity between dark violet and 'leas' colour is said to be Louis, King of France, who, in a joke, dubbed a dark violet '*la puce*.' The word then travelled to England, where 'puce' is now a common name for dark violet."

The word *haboka* is given in the Dictionary as "orange-coloured silk;" the meaning however is more general, not being the name of the silk, but of the orange colour. A verbal form, *mangaboka*, is also met with, which I have heard applied to loose orange-coloured earth; though it is not clear whether the latter may not have some connection with the root *haboka*, hollow. Among a host of other names denoting various shades and tints, there are three which appear to be close equivalents of our secondary colours, brown, broken-green and grey (not neutral grey, but grey with a preponderance of blue); neutral grey is called 'mist colour,' or

\* In the Timor language *kens* is the word for red,—ED.

'water-colour,' or merely 'dull' (*vdsoka*); for brown, *mavo* is usually given as the translation, but this is certainly incorrect; the meaning of *mavo* is light buff. A tertiary brown is called *volon-iddkatra*, i.e. the colour of the *Tàkatra* (*Scopus umbretta*) a large brown bird (a Stork) very common in Imérina and other parts of the country. The word for a tertiary or broken-green is *rivinkazo-maty*, the colour of 'dead leaves.' A tertiary grey is called *vòlom-bàtolàlaka*, the colour of the *vàtolàlaka* flower (*Caesalpinia Bonducella*). Shades of the same colour are expressed by adding *antiitra* (old) for dark shades, and *tanôra* (young) for light.

In addition to these nine chief colours, a great variety of names for other tints and modifications of these exists; the name in many instances being derived from some common object or animal bearing the tint requiring to be named. Thus we have 'ass-coloured,' 'ant-coloured,' 'iron-coloured,' 'tabby-cat-coloured,' 'fôdy\*-egg-coloured,' 'dead-locust-coloured,' 'burnt-brick-coloured,' 'earth-coloured,' 'pigeon-breast-coloured,' etc. Besides these names of colours proper, there are many words denoting colours and markings of animals, as *màra*, *vànga*, *sàda*, *sàdika*, *vàndana*, etc.; but to notice all these would exceed the bounds of the present paper.

While it is possible in most cases to find a word in English which broadly corresponds to a Malagasy colour, there are certain Malagasy names of colours (as *mànja*) which have seemingly no exact English equivalent; and it by no means follows that the English and Malagasy terms cover the same ground and are always mutually intertranslatable; thus the word *mena*, which in general means red, may be used to cover almost all shades containing any considerable proportion of red, from a rich orange, or even a broken-green, to a deep warm brown or chocolate.

*Manga* again, which we translate as blue, is often used in speaking of dark-skinned children, and is really equivalent to a dark olive-brown, though in this case the term may be used euphemistically, as people have a decided objection to be called *mainiy* (black), which is distinctive of the slave class.

The word *mailso* appears to be used almost synonymously with the Greek *chloros*; in general it means green, but is also applied to a yellow tint, as of one with the jaundice; and then, like the Greek word, it may be used metaphorically of anything tender, fresh and youthful, though in this case requiring the qualifying word *vòlo* (growth) after it.

Several other names of colours are habitually used in a metaphorical sense. *Manga* (blue) has already been referred to. *Mena* (red) is used frequently to denote anger, and also to represent anything intense, as "*Mena re izàny fiakàrana izàny*" i.e. "That ascent is 'red' (=steep and difficult)." It is also the symbol of royalty.

*Mavo*, in the verbal form *mànamavo*, is an equivalent for 'to set at naught,' the idea being that as *mavo* is buff or 'dust-coloured,' *mana-mavo* is equivalent to 'throwing dust on,' hence, 'setting at naught.' Curiously enough, the same word *mavo* is used as a term of endearment or flattery; thus, "*Màvomàvo mièndrika andriana*," i.e. "Buffish coloured like a prince." This is also the case in the proper name *Ramàvo*, which does not appear to refer of the colour of the skin at all, but is simply a name of endearment. The expression *mavo-vava* ('buff-mouthed'),

\* *Fôdy*, a species of Weaver-Finch; *Ploceus (Foudia) madagascariensis*.



to describe one who is famine-stricken, is probably derived from the bloodless pallid lips which, with the Malagasy complexion, appear *mavo* or light buff colour.

*Hàboka* (orange) is used to denote cruelty, ill-nature, or obstinacy, as "*Hàboka re izany òlona izany !*" i.e. "How crossgrained that person is!"

*Mainity* (black) is used as an intensive, though apparently in a bad sense, as in the expressions, "*Tsy tiako mainty izany*," "*Hàlako mainty izany*," i.e. "I hate it like poison."

But the most curious divergence from European ideas appears in the use of the word *fòtsy* (white). This with us is the emblem of purity and beauty, but, strange to say, the exact reverse is true of the Malagasy equivalent; for throughout its metaphorical uses it seems to be invariably used of something worthless, if not absolutely bad. Thus *mamòtsifòtsy*, 'to whiten,' means to disregard, make light of, only one step removed from our 'to blacken'! The adjective itself may have the meaning of vain, worthless, disparaging, which is more apparent in the derived adverb *fòtsiny*=merely, to no purpose, lit. 'whitely.' While with us 'white souled' is used to represent the height of moral purity, *fòtsy fandhy*, the literal translation of that phrase, is used of one of indelicate conversation, lewd, vulgar, indecent! The same derogatory idea appears in *fòtsy héhy*, a giggler, *fòtsy féo*, harsh-voiced, *fòtsy róra*, or *fòtsy ténny*, lit. 'white-spittled,' or 'white-worded,' one who cannot be believed, *fòtsy vdravdrana*, lit. 'white-doored,' used of one who gads about from house to house.

I have tried to get at the bottom of this aversion to the idea of whiteness, but have not been able thoroughly to satisfy myself. One suggested explanation is ingenious, to say the least of it: it is that whiteness is associated in the minds of the Malagasy with albinos (*bôbo*). That the Malagasy have a strong aversion to albinos is undoubted, and white animals, though not true albinos, they sometimes call by the same name (*bobo*); they also dislike the light-grey eyes of many Europeans, possibly from their resemblance to the light eyes of albinos. It is evident too that a dark skin, if not absolutely black, is not considered a defect, but rather an adornment, as is seen from the expression, "*Màngamànga sàa izany zànak' òlona izany !*" "What a lovely black (lit. 'blue') that child is!" Now however, at least among the Hova, there seems to be no aversion to a light complexion, and it is considered rather a distinction to be *mitarèhim-Bazàha* ('like a European in appearance').

But we must now hasten on to note a few points of interest in connection with the other senses, though with regard to none of these is there so much to notice as we have found in connection with sight.

As regards *Sound*, we have already seen that the word *feo* has to do duty for any kind of sound, voice, noise, or musical note; and it might be argued from this that the hearing of the Malagasy was dull or indiscriminating, and that they have little appreciation of music; but this is far from being the case, since, as a race, they have acute and correct hearing, and a decided, in fact a remarkable, aptitude for music; though their musical taste does not by any means coincide with cultivated European taste. Slow, solemn or grand music is in general distasteful and incomprehensible to them; but lively music, where the pulses are much divided, and the

## NOTES ON THE SEDIMENTARY ROCKS OF MADAGASCAR.\*

SO far as is known, not taking account of recent superficial accumulations, there are but few, if any, strictly sedimentary rocks intermingled with any part of the crystalline series found in Madagascar. Possibly, however, there may be found here and there on the eastern side of the island rocks of Tertiary age; but sedimentary rocks do not "form a belt around the island," as Mr. Wallace, in his *Island Life*, affirms. These rocks are found to the west and the extreme north and south of the island. My own observations with regard to these sedimentary strata, which however have been confined to the north-west of the country, confirm, with certain qualifications, the statement in the *Bulletin de la Société de Géologie* (Aug. 1871, p. 88):—

"The learned traveller has stated that the great island seems to be formed of a core of mica-schist rocks, which is surrounded to the west and south by a vast zone of the Jurassic formation. This zone, which underlies a narrow belt of Nummulitic strata characterized by *Neritina Schmideliana*, and forameniferous fossils (belonging to the genera *Alveolina*, *Orbitoides*, *Trilocolina*, etc.), extends from the southern shores of the Bay of Narèndry as far as the slopes of the granitic mountains, against which Fort Dauphin also abuts. This zone, as is well known, consists of plains which are traversed by three mountain-chains running north and south."

In a journey which I took to the north-west coast in 1886 I found, in various localities, a large number of fossils, which have been identified by Mr. R. B. Newton, F.G.S., of the British Museum, and of which a list is given in Appendix A. These fossils belong to the Jurassic, Cretaceous, and Eocene systems. The accompanying map gives the exact localities where they were found.†

In the north-west of the island sandstone is by far the commonest rock, covering vast stretches of country in thick beds. It varies much,

\* This article forms part of a much larger paper read by the Rev. R. Baron, F.L.S., F.G.S., before the Geological Society in the early part of this year, entitled "Notes on the Geology of Madagascar," and published in the *Quarterly Journal of the Geological Society* for May, 1889. I should have reproduced, by Mr. Baron's kind permission, the whole of this paper, but for the fact that the greater part of it had already appeared in our pages (in ANNUAL IX. pp. 59-77), under the title of "Notes on the Geology of the Interior of Madagascar." The only new matter is the portion forming this short article, on the Sedimentary Rocks of the island, and also a section on the Geology of the Ankaratra Mountains. This latter I omit for the present, as I hope Mr. Baron will give it in our next number, included in a complete article on the geology, botany, and physical geography of that central mountain mass. Mr. Baron's paper has two appendices, in shorter articles upon (1) some of the Fossils, and (2) on the Petrological character of some of the Rocks he has collected in Madagascar; and a summary of these—omitting many technical details, only interesting to experts in these subjects—is given as a supplement to this short article. Mr. Baron's paper contains a Geological Map of the northern half of Madagascar; the paper on the Fossils is illustrated by a beautiful lithographed plate with 19 figures; and the paper on the Rocks is also illustrated by 13 woodcuts.

I will only say further that my friend and colleague has gained much praise and credit from scientific men and learned societies in England for his scientific researches in Madagascar, and has lately been elected a Fellow of the Geological Society.—ED.

† Which we are sorry we cannot afford to reproduce here.—ED.

of course, in texture and composition, from coarse grit, which is found adjoining the elevated region of crystalline rocks, to rocks of a fine grain. It is mostly of a reddish colour, but yellow and white calcareous sandstone is also common. It seems, so far as I could discover, to be unfossiliferous. Some of the mountains (which are comparatively few) composed of sandstone are quite remarkable in appearance, especially Angoràony, to the south-west of Androntsànga, which is an isolated hill standing out as a witness to the enormous denudation to which the country has been subjected. It is composed of horizontal bands of sandstone weathered in such a way as to make it somewhat resemble a vast cathedral.

Beds of clay and shale are also common, many of which abound in Belemnites of various species. They contain also, in many places, large and numerous crystals of selenite. At the mountain of Tsitondròina, near Ambèrobè, cylindrical pieces of iron pyrites with a radiate structure may also be found. These, as well as species of Belemnites, are used by the natives as rifle-balls, and are known as *bàlahàra* or *bàlanjirika*. In some places, too, in the clay (between Ankarabàto and Ankoàla, for instance), large concretionary nodules of a calcareous nature are abundant; and to the north of Andranosamònta there are numerous septaria, the polygonal spaces being filled with calcite.

Extensive beds of limestone, which, as rule, are abundantly fossiliferous, also exist in the north-west of the island. The limestone varies much in texture, composition, and colour; for instance, to the west of Ankaràmy it is a black compact rock, and contains zinc-blende; in other places it is whitish and of close texture, or whitish and of friable texture. At Mojangà the rock is a greyish, more or less compact, dolomite. The limestone, in many places, presents a weathered surface of sharp-pointed and sharp-edged projections, which render it dangerous or impossible to walk on. In some localities, where exposed to the sea waves, it has the appearance of rude masonry. At Ambòdimadiro, not far from Nòsibè, the rock, a good section of which is exposed on the sea coast, is probably a kind of limestone-shale, which easily breaks up into small rhomboidal fragments in the direction of its vertical joints, which run about 30° from a right angle one to the other. It contains numerous centipede-shaped markings of what are probably tracks or burrows of some animal, possibly worms. The rock is here also invaded by numerous dykes of amygdaloidal basalt.\*

Near Ambàlanjanakòmby, to the north-west of Antòngodrahòja, there is a deposit of lignite containing a large proportion of iron pyrites (or marcasite?).

Coal has also been found in the north-west of the island. M. Guillemin, a French engineer sent out by the Company of Madagascar, reports that five coal-fields have been found, the coal from which he speaks of as "*houille sèche*," "*houille grasse*," and "*houille à gaz*." The five outcrops of Bavatòby, and two others found in Ampàsindàva Bay, yield coal in small quantity near the surface, but are extremely rich at greater depths. The following is an analysis of the coal from Ambavatoby:—

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\* Described by Dr. Hatch in Appendix B.

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Volatile matter.....	15.80
Carbon .....	70.87
Ash .....	13.33
	<hr/> 100.00

The whole series of sedimentary strata above mentioned are remarkably horizontal, having perhaps generally only a dip of a few degrees seawards; consequently it is impossible to say upon what beds they are superimposed, except that at their eastern boundary they lie unconformably on the gneiss. Probably, however, future investigation may be able to discover the underlying strata, that is, the strata (if there are such) lying between the Jurassic and the crystalline rocks.

From what I have observed, the sandstones are arranged more or less in horizontal sequence from east to west; that is to say, the sandstone chiefly occupies the territory adjoining the crystalline rocks (being a sandstone-grit at the junction), the limestone forms the western zone, and the clay and shales are intermediate. Of course this rule may not hold good in every locality; but if this be the general sequence of the rocks, which undoubtedly it is, it becomes evident that their component materials have been derived from the elevated crystalline rocks of the interior, and that therefore these latter formed part, if not the whole, of the island previous to Jurassic times.

It may be worthy of mention that on the western bank of the River Betsibóka\*, a few miles to the south of Mahabo (near Mârohâla), there is an outcrop of basalt with numerous agates.

In my journey to the north-west of the island in 1886, I came across some remarkable rocks which deserve notice. These rocks, which are crystalline, are located about a mile and a half to the north of Mahitsihazo (on the road between Andranosamonta and Ankaramy) in about  $41^{\circ}5'$  E. long. and  $14^{\circ}22'$  S. lat. One of the rocks is on the road near the summit of the ascent; it is most curiously, though irregularly, guttered with canoe-like channels, some of which are fully a yard in depth. It is as though it had been turned in a lathe, with ridges and prominences left between the parts gouged out, which parts, however, are not continuous round the stone. In the valley immediately to the south there is another of these curious rocks, and to the north there are several others, all of which are guttered in the same way. They do not seem to be protrusions from below, nor to belong to rocks disintegrated *in situ*, and there are no hills in the immediate neighbourhood from which they could have fallen, nor, indeed, is there to be found, so far as I know, any similar rock in the surrounding district. The gutters, in all that I saw, run in a direction round the rocks north and south, and the rocks themselves seem to observe the same direction in their distribution. I examined the rock upon which one of them was superimposed, and found it to consist of sand and clay. I would also point out for further investigation by future travellers some sandstone rocks a little further to the north; they seemed to me, from a very cursory examination, to be striated; but of this I am by no means certain. It would be highly interesting to know whether there really are any signs of glacial action

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\* While speaking of the Betsiboka, I may say that within the last few years it has shifted its bed at Amparihîbé. Formerly it ran on the west side of the village; now its course is about a mile to the east.

in Madagascar, and therefore I mention the above phenomena in the hope that they will receive further attention at some future time.

It may be as well here to give a list of the metamorphic and sedimentary strata of Madagascar, so far as they are at present known, referred to the European standard of geological chronology:—

POST TERTIARY ..	Recent	
TERTIARY .....	Eocene	
		{ Cretaceous { Upper
		Neocomian
		Oxfordian
SECONDARY .....	Jurassic ..	{ Lower Oolite (Cornbrash, Bradford
		clay, Fuller's earth)
		Lias
		{ Silurian ?
PALEOZOIC .....	Cambrian ?	
	Archæan	

R. BARON.

APPENDIX A.—*Notes on Fossils from Madagascar, with Descriptions of two New Species of Jurassic Pelecypoda from that Island.* By R. Bullen Newton, Esq., F.G.S., British Museum (Natural History). With Plate of 19 figures.

These fossils are mostly in a bad state of preservation, many of them being merely casts. The collection, however, is important as forming nearly the first series of Malagasy fossils that have ever reached this country, and on this account we are considerably indebted to the collector, the Rev. R. Baron, for having furnished us with material explaining the palæontological history of certain parts of Madagascar. The specimens, obtained from various localities in the north-west of the island, represent the Eocene, Cretaceous, and Jurassic formations. I have included here a notice of a few fossils kindly lent me by the Rev. Dr. Deane of Edgbaston, which were collected several years ago in South-west Madagascar by the Rev. J. Richardson of Antananarivo. They consist of Jurassic specimens, three of which are in such good condition that I have had them figured, one being a new species of Pelecypoda, viz. *Sphæra madagascariensis*.

TERTIARY.—*Pisces*.—Some *Fish Otoliths* accompanying the collection were, I am informed, discovered on the surface of the ground at Ankoala; so, in all probability, they are of recent origin, though bodies similar to them in form and structure do occur in the Upper Eocene (Barton Beds) of Hampshire.

*Mollusca*.—This group is represented by several internal casts of Gastropoda and Pelecypoda. These are not determinable; but they are of undoubted Eocene age, being associated with forms of Foraminifera belonging to that period.

*Foraminifera*.—(1) *Alveolina oblonga*. (2) *Nummulites sub-Beaumonti*. (3) *N. acutus*. (4) *N. obesus*. (5) *N. Beaumonti*. (6) *N. biaritzensis*. (7) *N. Ramondi*. (8) *Assilina spira*. (9) *Orbitoides*, sp. (10) *Orbitolites* (?). (11) *Rotalia* (?). All the above are Eocene, and are from north of Majamba Bay.

CRETACEOUS.—*Cephalopoda*.—(1) *Nautilus Fittoni*; Upper Cretaceous; from near Ambôhitrombikely. (2) *Belemnites conicus*; Ankaraobato. (3)

*B. polygonalis*; Ankaraobato. (4) *B. pistilliformis*, Besèva. (5) *B. binus*; N.W. Madr. All the above, except No. 1, are Neocomian.

*Pelecypoda*.—(6) *Alectryonia* (*Ostrea*) *ungulata*. (7) *A.* (*O.*) *pectinata* Besèva. (8) *A. Deshayesi* (?). (9) *Gryphæa vesicularis*. (10) *Exogyra ratisbonensis*. Nos. 6-9, Upper Cretaceous; No. 10, Middle Cretaceous; Nos. 6, 8-10 from Ambohitrombikely.

JURASSIC.—*Cephalopoda*.—(1) *Belemnites Sauvanausius*. (2) *Perisphinctes* (*Ammonites*) *polygyratus*. (3) *Stephanoceras* (*Ammonites*) *macrocephalum*. (4) *S.* (*A.*) *Herveyi*. (5) *S.* (*A.*) *calloviense*. Nos. 1-3, Oxfordian, from near Andranosamonta; No. 4, Lower Oolite, S.W. Madr.; No. 5, Callovian, near Ankaramy.

*Gasteropoda*.—(6) *Nerita Buvignieri*. (7) *Nerinea Eudesii*. (8) *N. Voltzii*. (9) *Natica intermedia*. (10) *N. Verneuli*. (11) *N. cincta*. All Lower Oolite; Nos. 6, 8 from Ankoala; No. 7, S. W. Madr.; Nos. 9-11, Iraony.

*Pelecypoda*.—(12) *Alectryonia* (*Ostrea*) *gregaria*. (13) *Ostrea Sowerbyi*. (14) *Perna mytiloides*. (15) *Pteroperna costatula*. (16) *Modiola imbricata*. (17) *Cypricardia rostrata*. (18) *C. bathonica*. (19) *Pholadomya ambigua*. (20) *Ceromya concentrica*. (21) *Opis trigonalis*. (22) *Lucina Bellona*. (23) *Myopsis dilatus*. (24) *Astarte angulata*. (25) *A.* (?) *Baroni*, nov. sp. (26) *Sphæra madagascariensis*, nov. sp. All Lower Oolite; Nos. 12 and 25 from Ankoala; Nos. 16-18, Ambohitrombikely; No. 26, S.W. Madr.; all others, Iraony.

*Brachiopoda*.—(1) *Terebratula maxillata*. (2) *Waldheimia perforata*. (3) *Rhynchonella variabilis*. (4) *R. plicatella*. (5) *R. tetraëdra*. (6) *R. obsoleta*. Nos. 2 and 5, Lias; others, Lower Oolite; Nos. 1 and 6, S.W. Madr.; Nos. 2 and 5, Ankaramy; Nos. 3 and 4, Ankoala.

*Echinodermata*.—(1) *Pentacrinus* (fragments). (2) *Acrosalenia* (fragments). (3) *Stomechinus bigranularis*. Nos. 1 and 2, Lias, from Andranosamonta; No. 3, Lower Oolite, from S.W. Madr.

*Actinozoa* (Corals).—*Isastræa* and, probably, *Thamnastræa*. Lias, from Ankaramy.

APPENDIX B.—Notes on the Petrological Characters of some Rocks collected in Madagascar by the Rev. R. Baron. By Frederick Hatch, Ph.D., F.G.S.

The rock specimens here to be described were collected by the Rev. R. Baron during his extensive travels through Madagascar. They do not by any means represent the whole of his collection; but care has been taken to make the collection include all the more important types of crystalline and volcanic rocks.

I.—THE OLDER CRYSTALLINE ROCKS. The mountainous portion of Madagascar, extending from north to south through the eastern half of the island, is a ridge of old crystalline rocks, on the western flanks of which sedimentary formations have been deposited, and through which volcanic rocks have been erupted. Mr. Baron's collection comprises both foliated rocks (gneisses), and rocks in which there is no parallel structure visible in the hand-specimen (granite, gabbro or norite, pyroxene-granulite, and pyroxenite).

1. *Gneiss*. Considered petrographically, the specimens of gneiss collected by Mr. Baron may be divided into an acid and a basic series; the former being characterized by the presence of abundant quartz with orthoclase as

The dominant felspar, the latter by subordination of the quartz and the predominance of plagioclase felspar. [Here follow minute descriptions of both these kinds of gneiss, granite and tonalite.]

2. *Granite*. The specimens of granite collected by Mr. Baron belong chiefly to the granite type, that is to say, they contain only dark mica. Only one specimen (from the mountain Vombôhitra, 80 miles N.W. of the Capital, a boss protruding through gneiss) was found to be granite with *two micas*. *Granulites*, from near Mândritsàra, from Vôtôvôrona (Vâkinankàratra), and from Ambôhipiàra, are all medium-grained rocks, composed of pale grey quartz and reddish felspar, with interspersed lustrous plates of black mica. [Here follow detailed descriptions.]

3. *Olivine-norite* or *Hyperite*. This rock occurs in large hills, protruding through the gneissose rocks on the north-east border of the plain of Antsihànaka, near Ampàrafàravôla. [Descriptions.]

4. *Pyroxene-granulite* or *Trap-granulite*. From Ambôhibao, 4 or 5 miles N.W. of Antanànarivo. In this rock garnets are a striking characteristic. [Descriptions.]

5. *Diallage-hypersthene-Rock (Pyroxenite)*. From Ambiniviny, 200 miles N. of Capital, and Andrànosamônta, N.W. Coast. [Descriptions.]

II.—THE VOLCANIC ROCKS. Those here described have been erupted mainly from vents occurring in the older crystalline rocks. These vents are very abundant in the near neighbourhood of the mountain mass of Ankàratra, which is itself of volcanic origin, both west of Lake Itàsy, and also near Bétafo, 50 miles further south. The greater proportion of the lavas are basaltic; but trachytes and andesites also occur.

1. *Basalts*. They may be divided, according to their mineralogical composition, into the following groups:—(a) *Olivine-Basalt*. From Iavôko near Bétafo, and Tsiáfajàvona, Ankaratra; doleritic type from Mojangà and Valàlafôtsy. [Descriptions, with 5 illustrations of structure.] (b) *Olivine-Basalt with Hornblende and Biotite in Porphyritic crystals*. From near Itasy. [Descriptions, with 5 illustrations.] (c) *Olivine-free Basalt with Hornblende in Porphyritic crystals*. From Kàsige, Itasy. [Description.] (d) *Basalt with Hornblende as a constituent of the Ground-mass*. From dyke at Ambôdimadiro, N.W. Coast. [Description.] (e) *Felspar-free Basalt*. From near Ambôhipôlo, Itasy. [Description with 3 illustrations.]

2. *Trachytes and Andesites*. (a) *Sanidine Trachyte*. From Ambôhitrakôholàhy, Ankaratra. (b) *Columnar Trachyte*. From S.W. of Ankaratra. (c) *Andesitic lavas*. From Andrànonatôha, and from west of Itasy. [Descriptions of all these.]

The basic members of the granites are interesting on account of their striking mineral combinations. The clear aspect and bright colouring of their constituent grains often make them objects of surpassing beauty when viewed under the microscope. Of deeper interest is the fact that these basic types, so well known in other areas of crystalline schists—in Saxony, Brittany, Scandinavia, Scotland, and on the Hudson River—constitute in Madagascar, as at Kilima-njaro on the adjacent mainland, so large a part of the ancient floor on which the sedimentary rocks were laid down and through which the volcanic rocks were erupted.

The basalts vary, as regards composition, with respect to the presence or absence of quartz, olivine, porphyritic and microlitic hornblende, and biotite. One curious type contains idiomorphic crystals of hornblende as a constituent of the ground-mass. A felspar-free variety, or *magma-basalt*, is also represented. This rock contains only a small quantity of olivine, and is therefore intermediate in composition between the *limburgite* of Rosenbusch and the *augitite* of Döller.

## THE NEW "DICTIONNAIRE MALGACHE-FRANCAIS."

AT the end of last year (1888), but too late for notice in the ANNUAL, there was issued from the press of "La Mission Catholique" a new Malagasy-French Dictionary, edited by "Les RR. PP. Abinal et Malzac, de la Compagnie de Jésus." It is a quarto book of 815 pages, with a Preface and Introduction (Grammatical) of 16 pages. We sincerely congratulate the Fathers on the completion of their work, for, in our way of thinking, it the best printed book that they have ever issued.

On first opening the book, one would be inclined to think that the style is copied from the New Malagasy-English Dictionary, issued by the L. M. S. Press in 1885; and many of the definitions are almost the same. Closer examination shows however that the Dictionary has been compiled from an independent point of view, and is more like the 'part' of a Dictionary issued by the F.F.M.A. Press many years ago, edited by Mr. Louis Street.

To commence with the preface, we are glad to read that: "Le premier Dictionnaire de la langue Malgache a été imprimé à Tananarive en 1835, par les Missionnaires Protestants Anglais." Cf. New Malagasy-English Dictionary, Editor's Preface. "Le R. P. Webber a publié en 1853, à l'île de la Réunion, un deuxième Dictionnaire Malgache..." "En 1885, le Missionnaire Anglais, Mr. Richardson, a fait paraître le troisième Dictionnaire Malgache."

This is as it should be: we differ widely in our ecclesiastical views, but surely that should not make us shut our eyes to the work we may do together and for each other in non-ecclesiastical matters.

The grammatical introduction is very brief, being 10 pages only. It is very clearly written; and again it is pleasing to find that, at last, the Fathers have followed the plan adopted some years ago at the Protestant Presses, and write "tranon' ny olona," and also join the suffix pronouns to the words they qualify.

We notice that in the introduction, on page xi., the particles indicating tense, *no* and *ho*, are joined not only to derivatives but to roots: cf. 3rd line, *Hohitako*; 13th line, *novinidiko*; 24th line, *Hotafavory*; p. xii, 9th line from the bottom of page, *notolorana*, etc.

In the Dictionary, under *HO*, we have *ho voafehy*; and under *NO*, *noka-pohina*. We are unable to tell whether *Ho voafehy* is a misprint, or *Hotafavory* a blunder; they surely cannot both be right.

To come to the body of the Dictionary, we find that the Fathers have again followed our lead in giving an explanation of the letters of the Alphabet. We made this a new feature in the Dictionary of 1885, the two preceding Dictionaries having nothing like it.

## L. M. S., 1885.

B. The second letter of the Malagasy Alphabet. It is sounded as *b* in English. After the elision of one of the weak syllables, *-NA*, *-KA*, and *-TRA*, in a word which is joined to a second beginning with *v*, *b* always

takes the place of *v*; thus *-NA* or *-NY* and *v* coming together, the *-NA* becomes *m*, and the *v* becomes *b*, as *TANIM-BARY* [TANY and VARY]; *OLOMBERY* [OLOVA and VERY]; when a word ending in *-KA* or *-TRA* is united



to another beginning with *v*, the -KA or -TRA is rejected and the *v* becomes *b*, as TONGO-BARIKA [TON-GOTRA and VARIKA], SATRO-BEHIVAVY [SATROKA and VEHIVAVY].

When the verbal prefix MAN- is

joined to a word beginning with *b*, the *b* is sometimes elided, and the *n* becomes *m*, as MAMABO [MAN- and BABO]; or the *n* is changed to *m*, while the *b* is retained, as MAMBETA [MAN- and BETA].

### JESUIT FATHERS, 1888.

B, *s.* Deuxième lettre et première consonne de l'alphabet malgache; il se prononce comme le *b* en français; il rejette toutes les consonnes à l'exception de l'*m*; il remplace le *v* après les muettes KA, NA, TRA et les adver-

bes ANY, AMY NY, d'après les règles de la combinaison des lettres. Quelquefois il s'élide ou se combine avec l'*n* du préfixe MAN et forme *m*: MAMABO pour MAN-BABO, etc.

In the definitions, the French Dictionary is in many instances much fuller than those in ours of 1885; there are a greater number of phrases and derivatives given; some of our mistakes are corrected, and the relative noun is always given, while other prefixes than *mi* and *man* are very clearly shown. This is a very valuable feature in this admirable work, and one we ought to note in any future edition of our Dictionary. The eight following extracts will show at a glance the advance that has been made.

#### L. M. S., ANTANANARIVO, 1835.

Rafibato, *s.* stone work, masonry, mandrafibato, *v. n.* to work in stone, to polish.

Rafitra, *s.* workmanship, especially carpenter's work; *voa. p. p.* wrought: *a.* at strife, at variance, contending, disputing.

mirafitra, *v. n.* to join together, to unite, to fit.

mandrafitra, *v. a.* to join, to work, (applied to carpenter's and mason's work.)

arafitra, *p. p.* being joined, being united; being wrought, being polished.

irafetana, *p. n.* the joining, cause, means &c. of it.

andrafetana, *p. n.* the uniting, cause, means &c. of doing it.

fandrafetana, *s.* carpenter's tools.

rafitrady, *a.* coming to a contest, contention.

#### PERE WEBBER, BOURBON, 1853.

Ráfitra, ouvrages surtout de charpenterie, de maçonnerie, de carrelage où l'on rapproche des parties. Miráfitra, être unis ensemble, joins, rapprochés co les bois d'un navire, être juste, se rapporter bien l'un à l'autre; en venir aux mains. Efa ráfitra h, efa tafa rafitra pv, ils sont aux prises,

en contestation. **Mandrafitra** lākana &, travailler un canot, une muraille &. **Mandrafitra** fafa, vato, ady, joindre, rapprocher, ajuster des planches, des pierres; commencer, engager le combat. **prāfitra**, **voa rāfitra**, **arafeto** (et **rafeto**) érika, commencez le feu, livrez, engagez l'attaque, venez-en aux mains. **Fandrafētana**, la charpenterie, la jonction; le commencement, l'attaque, **RAFITRADY**, l'attaque; **dh**, qui engage le combat, entre en dispute. **vo** **Lākandrafitra**, **zahay somila nandrafitr'ady tamindreo**, **rafeto indraiky**, **aza mimpodytsynirafitra atsika teho vassindreo**, **ndreteymahatoto**.

L. M. S., ANTANANARIVO, 1885.

**RA'FITRA**, *s.* and *adj.* Carpenter's work, masonry, brickwork; at variance, broken out, as a quarrel. **Tafarāfitra**, *v. pass.* Put together unintentionally. **Voarāfitra**, *v. pass.* Wrought, put together; at strife, at variance, contending, disputing. **Arafitra**, *v. pass.* (Imp. **arafeto**.) Used of the various pieces of a thing that are to be joined together to form a whole. **Rafētana**, *v. pass.* (Imp. **rafeto**.) To be wrought, to be put together. Used of the whole rather

than of the parts.

**Mirāfitra**, *v. int.* To join together, to unite, to fit.

**Mandrafitra**, *v. tr.* (Imp. **mandrafēta**; *Rel.* **andrafētana**, *Rel.* Imp. **andrafeto**.) To do carpenter's, mason's, or bricklayer's work. Mostly used of carpenter's work.

**Mpandrafitra**, *s.* A carpenter.

**RA'FI-RA'TO**, *s.* [**VATO**, a stone.] Stonework, masonry.

**RA'FI-KO'TRANA**, *s.* [**KOTRANA**, rough.] A retaining wall made of rubble.

**RA'FITR' A'DY**, *adj.* [**ADY**, a fight.] An attack, a contention.

## JESUIT FATHERS, 1888.

**RA'FITRA**, *s.* Ouvrage de charpenterie, de menuiserie, de maçonnerie, de mécanique; ajustage des pièces d'un même tout, construction d'un ouvrage, d'une maison, d'un pont, d'une machine; fig. action d'en venir aux prises, d'entreprendre un travail, de s'y appliquer.

**Rafē'tana**, *p.* Sur quoi on place, on applique quelque chose; avec qui on vient aux prises, on se querelle. **Rafeto**, *imp.*

**Ara'fitra**, *p.* A construire, à ajuster, à faire quereller. **Arafeto**, *imp.*

**Tafa**—, **voa**—, *p. p.* Qui a été placé, appliqué sur; construit, bâti, maçonné.

**Mand**—, *v. a.* Bâtir, construire, maçonner, ajuster, en venir aux prises, quereller. **Mandrafēta**, *imp.* **Fand**—, *s.* Ce qu'on construit, manière de **Mpand**—, *s.* Celui qui construit, le charpentier, le maçon, le mécanicien, etc.

**Fandrafē'tana**, *s.* L'action de construire, les instruments, le lieu. **Andrafē'tana**, *rel.* **Andrafeto**, *imp.*

Prend **Mifand**—, **Mampifand**—, **Mampand**—, **Mifampand**—.

**Mi**—, *v. n.* Etre assemblé, ajusté; s'appliquer. **Mirafēta**, *imp.* **Fi**—, *s.* Manière de... l'état de ce qui est ajusté. **Mpi**—, *s.* Ce qui est ajusté.

**Firafē'tana**, *s.* L'assemblage, l'ajustage, l'application. **Irafē'tana**, *rel.* **Irafeto**, *imp.*

Prend **Mampi**—.

**Maha**—, Qui sait ajuster, qui fait quereller.

**Rafidra'fitra**, *dupl. dim.* de **Rafitra**.

**RAFI-BA'TO**, *s.* Maçonnerie.

**RAFI-KA'ZO**, *s.* Charpenterie, menuiserie.

**RAFI-KO'TRANA**, *s.* Voy. **KOTRANA**.

**RAFITR' A'DY**, Qui se querellent.

**RAFITRA NY A'DY**, La bataille commence.

L. M. S., ANTANANARIVO, 1835.

Vony, *s.* yellow.

Voniny, *s.* its flower, petals.

mamony, *v. n.* to blossom.

Voniafo, *s.* a large shelf for keeping fuel &c.

Vonibe, *s.* a name of a bead.

Vonibezara, Vonifotsy, Vonimbazaha, *s.* different kinds of beads.

Voninahitra, *s.* honor, glory, dignity, reputation, fame.

manome voninahitra, *v. a.* to honour.

Vonintantamo, Vonintsiazonafo, *s.* the flower of the Tantamo.

PERE WEBBER, BOURBON, 1853.

Vôny, ou Vöny (ô ou ô) *g.* fleur. *ny vôniny*, ses fleurs (fé-laua). Efavaky—. maro—izy. vôninkazo, fleurs. Hazo MAMONY, qui fleurit, porte des fleurs. *ny taombony*, volambony, volana FAMONIANA, saison des fleurs. *vo Indrambony*, Indramboninkazo. VONINAFO, étincelles du feu. vonintantamo *g.* vonintsiazonafo, la feuille du tantamo qui forme une rosace à fleur d'eau, elle sert de Fianarantsôkitra, modèle de travail au poinçon. VONINAHITRA *g.* (fleur des champs) grade, dignité, honneur, gloire; signes de la dignité, galons, épaulettes, décoration. manome—azy, manisy—azy, manoloboninahitra azy & lui donner un grade; le glorifier, honorer. o iray—, qui n'a qu'un grade, caporal, Folo—, qui en a 10, ? colonel. (Le simple peuple est l'herbe sans fleur). *vo vônitra*, Fady. *ny MANAMBONINAHITRA*, les dignitaires, officiers.

L. M. S., ANTANANARIVO, 1885.

**VO'NY**, *s.* and *adj.* A flower, generally VONINY, its flowers, its petals; yellow. [Mal. *bunga*, a flower: for yellow are found Mal. *huning*; Gah. *kunu kunu*; Antiago *ununim*; Matabello *wulivulan*.]

**Mamôny**, *v. int.* To be in flower, to blossom.

**Ambôny**, *adj.* and *prep.* At the top, above.

**VO'NIA'FO**, *s.* [AFO, a fire.] A large shed for keeping fuel, etc.

**VO'NIBE'**, *s.* [BE, great.] A large and splendid variety of bead.

**VO'NIBE'ZA'RA**, *s.* [ZARA, a lot.] Certain beads of varied colours.

**VO'NY FA'NJA**. Used as follows:—

**Mamôny fânja**, *v. comp.* To be on the point of opening. Used of flowers, but especially a bean flower.

**VO'NIFO'TSY**, *s.* [FOTSY, white.] A variety of beads; also a shrub. (Sak.) *Mascarenhasia macrocalyz*, Baker.

**VO'NIMBAZA'HA**, *s.* [VAZAH, foreign.] Beads of an elegant kind.

**VO'NIMPOLE'RA**, *s.* The Marvel of Peru. Introduced. *Mirabilis Jalapa*, L.

**VO'NINA'HITRA**, *s.* [AHITRA, grass.] Honour, glory, dignity; lit. flower of grass.

**Mahâfa-bôninahitra**, *v. comp.* See **ATAKA**.

**Manâla vôninahitra**. See **ALA**.

**Mânamboninahitra**, *s.* [MANANA (ANANA), to have.] Officers, both civil and military.

**Manomê vôninahitra**, *v. comp.* [MANOME (OME), to give.] To honour, to pay respect to.

**Sâtro-bôninâhitra**, *s.* [SATROKA, a hat.] A crown.  
**Vo'NINAMA'LONA**, *s.* [AMALONA, an eel.] A young eel. (Prov.)  
**Vo'NINE'NINA**, *s.* [NENINA, regret.] An herb. (Antsih.) *Epallage dentata*, DC.  
**Vo'NINJA'ZAVA'VY**, *s.* [ZAZAVAVY, a girl.] A shrub.  
**Vo'NINKA'ZO**, *s.* [HAZO, a tree.] A

flower.  
**Vo'NINTATA'MO**, *s.* [TATAMO, a large blue water lily.] The flower of the TATAMO.  
**Vo'NINTSLA'ZONA'FO**, *s.* [TSY, not, AZO, caught, AFO, a fire.] The flower of the TATAMO.  
**Vo'NIRA'NO**, *s.* [RANO, water.] A species of fish. (Prov.)

## JESUIT FATHERS, 1888.

**VONY**, *s.* Fleur.  
**Mamo'ny**, *v.n.* Fleurir. Fam—, *s.* Manière de fleurir. Mpam—, *s.* Ce qui fleurit.  
**Famoni'ana**, *s.* La floraison, la saison. Amoniana, *rel.*  
 Prend Mampam—.  
**VONIFA'NJA**, *s.* Fleurs qui produisent les fruits.  
**MAMONIFA'NJA**, *s.* Fleurir, se dit des haricots et du pêcher.  
**VONIM-PA'ISO**, *s.* Fleur du pêcher; fig. de couleur rose.  
**VONIM-POLE'RA**, *s.* Belle-de-nuit. *Mirabilis Julupa*, L.  
**VONINA'HITRA**, *s.* Fleur des herbes; fig. grade, honneur, gloire, dignité.  
**MAHafa-BONINA'HITRA**. Qui déshonore.  
**MANALA VONINA'HITRA**. Déshonorer, confondre, humilier.  
**MANAM BONINA'HITRA**, *s.* Qui a un grade, officier; par extension: dignitaires civils.  
**MANOME VONINA'HITRA**. Honorer, rendre les honneurs, traiter avec respect,

avec considération.  
**VONINAVO'KO**, *s. Lit.* Fleur de l'Avoko; de couleur rose vif.  
**VONINJAZAVA'VY**, *s.* Arbuste.  
**VONINKA'ZO**, *s.* Nom générique des fleurs.  
**VONINTATA'MO**, *s.* Fleur du nénuphar. *Nymphaea stellata*.  
**VONINTSLAZONA'FO**, *s. Lit.* Fleur à l'abri du feu; nom figuré de la fleur du nénuphar.  
**FANGALAVO'NY**, *s.* Chancre qui ronge le nez.  
**VONY**, *adj.* Jaune.  
**VONY ANTITRA**, *adj.* Jaune pur.  
**VONY TA'NORA**, *adj.* Jaune faible, foncé.  
**VONIBE**, *s.* Belle et grande perle jaune.  
**VONIBEZA'RA**, *s.* Perle de couleur jaune, mélangée à d'autres couleurs.  
**VONIFO'TSY**, *s.* Perle d'un jaune clair.  
**VONIKE'LY**, *s.* Perle.  
**VONIMBAZA'HA**, *s.* Belle perle.  
**VONIA'FO**, *s.* Claie placée au-dessus du feu pour faire sécher le bois.  
**VONIVA'TO**, *s.* Rocher éminent, en évidence; fig. refuge, retraite sûre.

The foregoing extracts afford abundant matter for a lengthy review, but as the space at our disposal is limited, we can only briefly refer to the more salient points.

It will be noticed that in the 1885 Dictionary, all words derived from the root are inset, while in the one of 1888 they are not. In the 1885 Dictionary *all* imperatives and relative verbs are enclosed in brackets and are printed in italics; but the Fathers have printed them in the same type as the rest of the definition, and consequently they are not so easy for reference. Even when a derivative is formed from a compound word, it is inset and printed in 'small Clarendon' in the 1885 Dictionary; and the Fathers, in our humble opinion, make their Dictionary less useful than it should be by printing the derivatives from compound words in small capitals and without an inset; cf. pp. 20-23, 1885 Dict., with pp. 16-18, 1888 Dict. under ALA.

Again, the 1885 Dictionary gives in brackets the derivation of all compound words; the 1888 one does not do so generally. We think the value of the work would be enhanced by always showing the derivation.

We well remember, when preparing the copy of the 1885 Dictionary, coming across the word *mabolanilalana*. It appears in the appendix of the 1835 Dictionary; Père Webber copied it into his of 1853, giving a reference to that of 1835. But in Père Webber's Dictionary we found a word *mabo* (foot of p. 455), and the meaning, "pv. fille; kalo, safy." Now we naturally thought that *mabolanilalana* had something to do with his. On enquiry however we found the words were MA'-BO'LANA ILA'-ANA, and so we printed it in the Dictionary as follows: "MA'-BO'LANA LA'LANA, s. [MAKA, to get, VOLANA, speech, ILALANA on the road.]" This makes the meaning clear and shows it to have no connection with *mabo*. In the 1888 Dictionary it is printed: "MA-BOLANA ILA'LANA *maka, volana, ilalana.*)"

In both the modern Dictionaries, in words derived from the French and English, the original word is referred to, and the 1885 Dictionary also has references to more than 400 words derived from Arabic, Malay, etc. [cf. ARO, VONY, etc.], while the 1888 one has only one here and there.

One of the specially interesting and useful features of Père Webber's Dictionary of 1853 was its marking of Sàkalàva and other provincial words; the Fathers in theirs of 1888 have not marked such words, which we think to be a mistake. Surely their profound knowledge of the Malagasy language, and their long residence among the various tribes, should have enabled some of their number to give us such a much-needed feature in a dictionary. The reviewer of the 1885 Dictionary, in the ANNUAL of 1886, complained of all such words being embraced by the simple contraction "Prov." What then must be said of its omission altogether!

In the names of plants, animals, birds, etc., the scientific names are almost invariably given in the 1885 Dictionary, while the 1888 one only gives one here and there. This, again, we venture to think, is a mistake, for the Fathers have as good, if not better, materials at their disposal for the purpose as we have.

We refrain from making complaint of the frequent breaking of the alphabetical order in the compound words, and also of the misspellings, usually attributed by us editors to the perversity of the "printer's devil," but which more probably arise from our own want of proper care in editing. We think as many "printers' errors" could be found in one as in the other.

In conclusion, we again heartily congratulate and thank the Fathers for the very valuable book they have issued, and we shall try and show our appreciation of its merits by making use of their extended meanings in any future edition of a dictionary. With the Dictionaries of 1885 and 1888 at their disposal, both English and French ought to become more efficient Malagasy scholars.

J. RICHARDSON,

Editor "New Malagasy-English Dictionary."



## VARIETIES.

X. **A Malagasy Wild-man-of-the-Woods.**—Besides these tribes [that is, the Bètsimisaraka and others], it is interesting to note that one hears occasionally of wild men being seen in the dense forest. We were informed by a trader from Mauritius, a Mr. Carmes, who saw him, that in 1879 a wild man was captured about 80 miles west of Marôantsètra. He was caught by some Malagasy in the employ of a Manahar trader, while asleep on the branch of a tree, and when taken resisted violently, biting his captors severely; after a few days' confinement however, he ceased to be aggressive. Mr. Carmes describes him as being a powerfully built man of about five feet nine inches in height, his face and body being thickly covered with long black hair; his mode of walking was peculiar, as he travelled very fast, with his head down, occasionally going on all-fours, his eyes (which resembled in expression those of an animal rather than of a human being) invariably being fixed on the ground. When caught he was perfectly nude, but wore clothes when provided with them. He could never be induced to eat flesh or any kind of cooked food, subsisting entirely on manioc and other roots; nor would he sleep in a recumbent position, but when resting preferred to squat on hands and feet on a stool in a corner of the house. After some weeks he commenced to learn a few words, and by means of these and signs it was understood that he had a father and two brothers in the forest where he was taken. These were found and surrounded by a search party one night, but being disturbed, easily eluded their pursuers, jumping from tree to tree like monkeys and running on all-fours. The captured man died five months after being taken.—L. H. RANSOME; *Proc. Roy. Geogr. Soc.*, May, 1889.

**Malagasy Filanjana Bearers.**

Bearing their burdens cheerily, laughing the livelong day,  
 Pacing o'er dale and mountain, wending their toilsome way;  
     Puffing and panting, up hills steeply slanting,  
     Skillfully bearing the *filanjana*\* canting,  
 Grumbling not at the sun's scorching ray,  
     Wading through swamp and brooklet, splashing their course along;  
     Bounding through plain and forest, thinking the track not long.  
 Chattering and pattering, with tongue ever clattering,  
 Joyous if of it the Vazaha has a smattering;  
     Growling not at the rain's stinging thong.  
 Pacing with even footsteps, never losing time,  
 Changing places racing, like the measured beat of rhyme.  
     Lifting and shifting, but never desisting,  
     Always each other with pleasure assisting;  
 Happy through all the toiling daytime.  
     Tramping with wondrous vigour, moving with easy grace,  
     Pausing not on their journey, dashing as in a race;  
 Smiling and wiling, for a present beguiling,  
 Ever joke-cracking, if the Vazaha is not riling—  
     Such is the life of our native *mpilànja*,  
     This is marvellous way that they keep up the pace!

'ALEXANDER SELKIRK.'

From "*The Madagascar Times*," Aug. 10, 1889.

\* *Filanjana* is the Malagasy word for the native palanquin (which is nothing like what is known in India by that name), and the *mpilànja* are the bearers of the same. See article on "How we Travel in Madagascar," in ANNUAL VIII. pp. 33-42.—ED.

**The Place-names Antongil and Ngontsy.**—Amongst all the place-names in Madagascar, I believe there now remain very few whose derivation has not been cleared up in the pages of the ANNUAL. Mr. Pickersgill last year threw a great deal of light on the Arabic origin of many words, names of places on the west coast; and of course the history of a place-name is almost always the key to a great deal of the history of that place. There are three place-names on the east coast whose history I believe is still a puzzle, or at least a subject for difference of opinion, to philologists, and these are Tamatave, Antongil Bay, and Ngontsy.

Of Tamatave\* I do not intend to speak, but of Antongil and Ngontsy the following solution appears to me a probable one. I find that in Imerina, Antongil is pronounced (and taught in schools) with the hard *ng*, according to the genius of the Malagasy language; and the word does in every respect look like a Malagasy word, with the exception that it has no final vowel. The word however is undoubtedly of foreign origin, and the *ng* should be pronounced as in the English word *angel*. It has long been an accepted theory among foreigners that the word is a contraction of 'Antonio Gil,' the supposed discoverer of the bay, and some writers two centuries ago spell the word in its separated form 'Anton Gil.' This appears to me a very improbable solution, especially as in those days Madagascar places, almost without exception, were named after a Saint. I should therefore be much more inclined to consider Antongil as a corruption of the Portuguese 'Santa Angelo.' What would tend very much to support this theory is, that we have authentic proofs of a town in the bay being called Santa Angelo, as far back as 1650, whereas I never read in any history of this Senor Anton Gil. It would seem that the French or Dutch, coming after the Portuguese, failed to catch by the sound what its derivation was, and in committing the word to writing adopted the Anton Gil theory.

Ngontsy in the same district, on the other hand, is pronounced with the hard nasal *ng*, and in every respect looks like a Malagasy word, and yet, though I lived there a considerable time, I never heard it used once by the natives except as a foreign word, nor is it to this day accepted by the Government in Antanarivo as the name of the place, the Hova calling the town Anônibè, and the natives on the spot Antranombazaha ('Foreigners' town'). We have here, I venture to say, another corruption of the word *Saint* before a proper name beginning with *Ga* or *Go*, whether in the Portuguese or French stage of settlement would make little difference, as the Saints of the Latin Church were the same throughout the south of Europe. It may appear far-fetched—but more unlikely looking metamorphoses do take place every day—that Ngontsy should be a corruption of 'Saint Gontran,' a Saint whose feast is on the 28th March, but one thing is evident: that the true pronunciation of Saint Gontran, if repeated by a Malagasy, would be exceedingly similar to Ngontsy, as regards the body of the word. The initial *S*, as in Santa Angelo, has been dropped, and *ts* and *tr* are interchangeable in many provincial dialects. Moreover, we must bear in mind that the corruption is more than 200 years old, when both Malagasy and French were not exactly the languages of to-day. Any one who listens to the present pronunciation of the word Saint-Denis, the capital of Bourbon, can readily understand what changes any word could undergo, when reduced to writing by one ignorant of its spelling.—A. TACCHI.



\* No one, so far as I know, has yet attempted an explanation of 'Tamatave;' but as regards its native name of 'Toamasina,' it seems most probable that it is a corruption of 'San Tomaso,' the first word being dropped, and the very common ending *na* being added.—ED.

## BOTANICAL AND NATURAL HISTORY NOTES.

X **A Nest-building Frog from Madagascar.**—From the peculiar fauna and flora of Mauritius, the island has been from early times a favourite hunting-ground of naturalists, and it possessed one advantage over most tropical and sub-tropical lands: its dense forests and ravines and high mountains were free from venomous reptiles, save a few small scorpions. The only ophidian was a small snake, designated by Dr. Günther the 'Blind-worm' (*Typhlops flavo-terminatus*, Peters), and this is very rare. Strange to say, on Round Island, only a few miles from Mauritius, there is a breed of the family *Boidæ*, the *Cesarea Dussumieri*, only known elsewhere in the Loyalty Islands, in the Southern Pacific. Not a frog or toad formerly existed here, but in 1812 a small species of frog was introduced by M. Genève from Madagascar, and is, I am informed, the *Rana fasciata*. It has spread all over Mauritius, but varies in size and colour in different localities. Most have a bright green stripe on the back, with dark rows of squarish marks divided by white lines, pale underneath, and a glint of crimson near the eyes.

During the frequent long droughts, when the marshy lands are dried up, and two-thirds of the streams show only a few deep holes of water, the frog selects some shady nook where he can pass what is to him a very trying season. A favourite spot is where any long grass has survived, in which places I have frequently come upon these frog-retreats. When frightened, they make one jump forward and throw out the limpid stream of water which has been carefully stored up in case of need, as in very dry weather. This liquid is distributed over the body in order to keep the pores of the skin open, as at times pulmonary respiration is not sufficient, and the action of the air on the skin is required to sustain life. When starting these frogs from their covert, I have often been surprised at not seeing them jump twice, and after a careful search never could find them again, although I beat the grass with my stick and opened it in all directions with my hands. My curiosity was aroused, and after a careful examination of their haunts and habits, I was much interested at the display of cunning in these little creatures.

They construct regular passages under the grass, and when first disturbed throw off the water so as to move rapidly. As I said before, they only jump once, and that *from* you, and alight in one of their paths unseen by you. Having seen a frog jump in front of you, naturally you would look for him where he seemed to have alighted, but he drops quickly into a path which perhaps leads directly to you. Thus he doubles on you, and to dislodge him is no easy matter, unless you know his habits and are well up in his cunning dodges. In their paths they move as stealthily as a mouse, not disturbing a blade of grass. They seem to be gregarious. Their paths are constructed as regularly as those of a mole, by the little creatures pressing down the short grass near the earth, and drawing together overhead the longer blades, but not touching the *upper* surface, thus rendering them invisible. The nests are 8 or 10 inches in diameter by 4 in height, and made ingeniously by weaving the lower layers of grass together.—NICHOLAS PIKE; *Scientific American*, July 20, 1889, p. 39, with illustration.

Y **A Contribution to the Molluscan Fauna of Madagascar.**—Much still remains to be done before our knowledge of the terrestrial and fluviatile Mollusca of Madagascar will attain any thing like completeness. With the exception of *Achatina fulica*, *Helix magnifica*, and one or two others, I am not aware that any of the numerous species of shells already described from this island have been examined. Of non-operculate land-shells



about eighty are now known, of operculate species about seventy-five, and about fifty forms have been recorded from the lakes and rivers; this computation includes the new species about to be described without localities. One minute species, *Helix barrakporensis*, has not previously been met with except in India, where it may have been introduced, as is the case with the large *Achatina fulica*, a most abundant shell in some parts of Madagascar and also at Mauritius. A small South-African bivalve shell, *Limosina ferruginea*, is now cited for the first time as an inhabitant of the island; and *Sphærium madagascariense* of Tristram is scarcely separable from another African species, *S. capense* of Krauss. Four species belonging to genera not previously known from Madagascar are now described; these are *Vitrina madagascariensis*, *Cleopatra trabonjiensis*, *Corbicula madagascariensis*, and *Pisidium Johnsoni*.

Part of the collection which is here reported upon was liberally presented to the British Museum by Mr. W. Johnson, and to whom much praise is due for so carefully noting the precise localities where he collected the various species; and on this account his name will be found associated with several of his own interesting discoveries. The remaining portion was obtained from the Rev. W. Deans Cowan, and was collected by him in a more southern part of the island than that visited by Mr. Johnson. It also contains several very interesting forms, notably the species of *Vitrina* previously referred to, and the *Bulimus nigrilineatus* of Reeve, belonging to a section (*Rhachis*) of that immense group of land-snails which was hitherto unknown in Madagascar.—EDGAR A. SMITH; *Proc. Zool. Soc.*, No. xxvi., 1882.

#### List of Shells in the Collection.

##### A.—GASTEROPODA.

*Cyclostoma macarea*, var.  
*C. betsileoense*, sp. nov.\* 2 varieties.  
*C. congener*, sp. nov.\*  
*C. Johnsoni*, sp. nov.\*  
*C. lineatum*, Pfeiffer.  
*Vitrina madagascariensis*, sp. nov.  
*Helix* (*Nanina* ?) *Balstoni*, Angas.  
*H.* (*Nanina* ?) *Cleamsi*, sp. nov.\*  
*H.* (*Kaliella*) *barrakporensis*, Pfeiffer.  
*H.* (*Helicophanta*) *bicingulata*, sp. nov.\*  
*H.* (*Macrocyclis* ?) *Covani*, Smith.\*  
*H.* (*Ampelita*) *Shavi*, Smith.\*  
*H.* (*Ampelita*) *Percyana*, Smith.  
*Bulimus* (*Rhachis*) *nigrilineatus*.  
*Stenogyra* (*Clavator*) *Johnsoni*, sp. nov.\*

*Melanatria Johnsoni*, sp. nov.\*  
*Cleopatra trabonjiensis*, sp. nov.\*  
*Ampullaria madagascariensis*, sp. nov.  
*Limnea hovarum*, Tristram.  
*L. electa*, sp. nov.\*  
*Physa madagascariensis*, Angas.\*  
*P. lamellata*, sp. nov.\*  
*P. obtusispira*, sp. nov.\*  
*Planorbis madagascariensis*, sp. nov.\*  
*Neritina gagata*, Lamarck.  
*N. fulgetrum*, Reeve.\*  
 B.—CONCHIFERA.  
*Corbicula madagascariensis*, sp. nov.\*  
*Sphærium madagascariensis*, Tristram.  
*Pisidium Johnsoni*, sp. nov.\*

**A Remarkable Flowering Liana.**—There are many beautiful flowering trees and shrubs in the Madagascar woods, but although we have been on the outskirts of and through the upper eastern belt of forest many times, it was not until the November of this year (1889) that we saw one of the most beautiful and conspicuous of these forest flowers, probably because it only blooms exactly at this time of the year, and also because it is only in flower for a comparatively short time. The flower in question is that of one of those numerous species of liana, or *vàhy*, as the Malagasy term them, which are so plentiful in all tropical forests, and not less so in those of Madagascar, and which bind together in a tangled mass the higher vegetation, climbing to the topmost boughs of the tallest trees, and crossing and re-crossing in all directions like the disordered cordage of a ship. This liana is about as thick as a one-inch rope, and its spikes of creamy-yellow flowers are set pretty closely (from one to two feet apart) on the main stem. These spikes are from 10 to 16 inches in length, each containing from 40 to 60 large flowers growing closely together, so that they are very conspicuous in the

\* All the species marked with the asterisk are shown in the plates.

forest, forming immense festoons of flowers, mounting to the tops of the loftiest trees, crossing from one tree to another, and shining almost golden in colour in the brilliant sunshine. These lianas are very plentiful in many parts of the forest, and may be recognized at a considerable distance, so that they form at this period one of the noticeable features of the upper line of woods. The following is a more minute description of the flowers of this liana, which is called *Vrangaràba*.—JAMES SIBREE, JUN. (ED.)

The flowers grow in large thickly-packed clusters, which again are composed of small clusters of from two to five flowers each, growing on short stems proceeding from the parent stem on different sides, at irregular intervals. The calyx is monosepalous, globular, and of a light-green colour. The unopened corolla resembles a tiger's claw in shape, and is of a pale-yellow colour, shading through apricot to bright-red at the tip. When opened, one petal retains the claw-like shape, another petal turns downward over the calyx, and is about one inch broad in its widest part, but narrows to the tip and is fully  $2\frac{1}{2}$  inches long; the remaining two petals are much smaller and appear to be joined to the upright claw-like one, enfolding it, but are easily separated from it. The claw petal does not open except for a short distance from the base, and also slightly at the tip, where the pistil and stamens push their way through. The stamens, nine in number, are only divided for about  $\frac{2}{3}$  inch and fold together over the pistil; outside and fitting over the joining of the others is, however, another stamen. The anthers are very small. In the cup formed by the curving over of the largest petal is a large drop of the sweetest nectar, which no doubt forms a considerable portion of the honey found in the forest at the season.—E. CRAVEN.

Y **A Curious Arboreal Lizard.**—While staying at Ankéramadinika in Nov. 1889, a very curious arboreal lizard was brought to us by some boys. This creature was clinging to the end of a stick, a small branch of a tree, and at first sight, and until closely examined, it was difficult to distinguish it from the wood to which it clung. The animal was about 6 inches in total length, the tail being 2 inches long. The body was somewhat flattened, as well as the head, which was long, and the snout pointed, the eyes being very large and bright, but of a pale-brown colour. The feet were spread out and somewhat webbed, and the toes ended in small disks like those of the tree-frogs and the geckoes. The tail was broad and flat, lying close to the branch, and shaped something like that of a beaver. But the most interesting point about this lizard was the wonderful resemblance of its colouring to that of the bark of a tree. The minute scales of the skin were mottled with brown, green, grey and white, so as to exactly resemble tree bark, with its usual clothing of tiny bright-green, brown, grey, and white lichens, together with small irregularities of surface; so that until closely examined, one could hardly believe that the small patches of colour on the animal's skin were not also caused by minute vegetable growths. A more perfect example of protective resemblance to the surroundings of the animal could not be imagined; indeed it was difficult at a few inches' distance to see where the lizard began and the wood ended; and in the forest, unless the creature moved, it would be impossible to distinguish it from the branch to which it clings. The under portions of the body were greyish-white in colour, with minute black dots scattered over it. On side each of this lizard were two small dark spots, but this was the only approach to regularity of markings on the animal. The name which the people give to this lizard is *Rakéma*.—JAMES SIBREE, JUN. (ED.)

**The Largest Madagascar Carnivore** (*Cryptoprocta ferox*, Bennett).—It is well known that the genus of this carnivorous animal was formed from acquaintance with a young specimen only, and that this has given rise to

repeated discussions as to the place which the animal should occupy in the classification of the Carnivora. The examination of an adult male, which we regard as identical with the *Cryptoprocta* of Bennett, has shown us that this animal is in fact only a Cat, modified it is true, but not in a very extraordinary manner.

The following are, briefly, what these modifications amount to: when compared with the Cats (*Felidæ*), the *Cryptoprocta* recalls these animals by its general appearance and structure, by its dental system and partially retractile claws; and it is allied more particularly, as regards its structure, to the Jaguar, and by its colouring to the Puma (*Felis concolor*). On the other hand, the *Cryptoprocta* is distinguished from most of the *Felidæ* by the greater elongation of the whole body, including the head, while the limbs are also shorter; by the well-developed anal pouch; by an additional molar on each side of the lower jaw; and also by the bare skin of the soles of the feet, which are longer and not so much divided as in other animals of the same class; and it is plantigrade like the Bears, and in this respect differs from the majority of the *Felidæ*, which are digitigrade.

The total length of the *Cryptoprocta*, including the tail, is 4 ft. 8 in., but of this the tail occupies 2 ft. 2 in., and it stands about 1 ft. 3 in. high. It is entirely covered (except the soles of the feet) with thick glossy fur of a tawny brown, which becomes somewhat darker under the body.

The animal which bears among the Malagasy the name of *Fosa* is the *Cryptoprocta ferox* of Bennett, and not the *Viverra fossa* of Gmelin. The word 'Fossa,' which appears first in Flacourt's work and was employed by him to describe an animal like a badger (see *Histoire de la Grande Isle Madagascar*, p. 152), was applied by Buffon and subsequent naturalists, to a species of Civet indigenous to Madagascar; see Buffon: *Fossan* and *Viverra fossa*. The Malagasy however give to the name of *Faboady* to the species of Civet, while they apply that of *Fosa* to the *Cryptoprocta ferox*. This animal is very voracious and powerful, when its small size is considered. It is not dangerous to man except when it is wounded, or at the breeding season. At this period it is, so say the natives, very ferocious, and does not fear man, whom at other times it constantly avoids; and it may then be seen in small companies of from four to eight individuals. This time is called by the Malagasy *Vôlampôsa*, that is, 'Fosa's month,' and they relate a number of fables about these animals. They say, among other things, that this Fosa extinguishes the nocturnal fires of the inhabitants, scratching them out with its feet; also that in order to kill fowls it makes the round of the fowl-houses, at the same time emitting its fetid odour, which immediately kills the fowls; and that it makes play with its whiskers when it sees a man; etc., etc. They say that it climbs the trees in pursuit of the lemurs, of the flesh of which it is very fond. The specimen which we killed was a handsome adult male, and according to their account, a destroyer of the first rank. In a very short time he had carried off two turkeys, three geese and a score fowls. He had seized the first of these by leaping upon the hut of the owner, who assured me that he also carried off young pigs and other domestic animals. So that when they are fortunate enough to trap a Fosa, the natives do not fail to kill it without mercy with their spears in a most barbarous manner, after having burnt off its whiskers, in order, as they say, to dishonour it.

The natives are greatly afraid of these creatures. One day my hunter Zoudze, while engaged in hunting lemurs in the neighbourhood of our camp, perceived all at once, while coming up from a hollow, a Fosa approaching him, panting at the time. The poor man, trembling with fear, flung down his musket and saved himself by climbing up a tree, where he remained until the animal disappeared among the bushes.

The Malagasy affirm that there exists in their country another species of Fosa, the fur of which is of a uniform black colour. It appears that the flesh

of this animal is good to eat ; at least the Malagasy regale themselves with steaks taken from it, which they say are excellent.

Translated from the French of FRANCOIS P. L. POLLEN,  
by JAMES SIBREE, JUN. (ED.)

## LITERARY NOTES.

**New Books on Madagascar.**—There has been little of interest or value relating to this country published during the year 1889, with the following exceptions :

*Dictionnaire Malgache-Français* par les R.R. P.P. Abinal et Malzac, de la Compagnie de Jésus. La Mission Catholique, Antananarivo : 1888.

This work properly belongs to our literary record of 1888, but it was issued just too late to be noticed in our last number. See Mr. Richardson's article (pp. 110-115 ante).

Of M. Grandidier's great work, *Histoire physique, naturelle et politique de Madagascar*, the following portions have been issued :

*Histoire naturelle des Plantes* : 3ème partie du 1er vol. de l'Atlas, comprenant 40 planches ;

*Histoire naturelle des Mollusques* : 1ère partie de l'Atlas, comprenant 27 planches.\*

During the year Capt. S. P. Oliver has published, in the weekly issues of *The Madagascar Times* (July 6th to Nov. 23rd), an Old-English translation of one of the earliest French books on Madagascar, viz., Le Sieur de Morisot's *Relation du Voyage que François Cauche de Rouen a fait à Madagascar, îles adjacents et coste d'Afrique* ; Paris : 1651 ; pp. 193. This translation is also, we believe, to be published as a separate work by the Hakluyt Society, as well as a translation by the same writer of Flacourt's *Histoire de la Grande Isle Madagascar* ; and an annota-

ted and new edition of *Madagascar : or Robert Drury's Journal during Fifteen Years' Captivity on that Island*, also by Captain Oliver.

**Papers and Pamphlets on Madagascar.**

Among articles in magazines are the following : "Two famous Rogues" [Ikòtofetsy and Mähakà] ; by Rev. G. Cousins ; *Leisure Hour*, Nov. 1888 ; pp. 759-761.—"The Flora of Madagascar," by Rev. R. Baron, F.L.S., F.G.S. ; *Linnean Society's Journal (Botany)*, vol. xxv. 1889 ; pp. 246-294, with Map.—"Notes on the Geology of Madagascar," by Rev. R. Baron ; *Quar. Jour. Geol. Soc.*, May, 1889 ; pp. 307-331, with Map.—"Notes on Fossils from Madagascar," by R. B. Newton, Esq., F.G.S. ; *Quar. Jour. Geol. Soc.*, May, 1889 ; pp. 331-339, with plate.—"Notes on the Petrological Character of some Rocks collected in Madagascar," by Dr. F. H. Hatch, F.G.S. ; *Quar. Jour. Geol. Soc.*, May, 1889 ; pp. 340-355, with 13 woodcuts.—"The River Antanambalana, N.E. Madagascar," by L. H. Ransome, Esq. ; *Proc. Roy. Geogr. Soc.*, May, 1889 ; pp. 295-305, with Map.—"Das Volk der Sud-Sakalava," by Rev. Rostvig and Rev. A. Walen ; *Mitt. d. Geogr. Gesell. z. Jena*, vol. v., pp. 118-128 ; vol. vii. pp. 106-120.—"Le Route de Tamatave à Antananarivo," by Capt. Le Fournier ; *Rev. Maritime*, Mar. 1889 ; pp. 516-532, with Map.—"Travels in Madagascar, especially on the banks of the Betsiboka and Ikopa Rivers," by E. Cortese, C.E. ; *Bull.*

\* M. Grandidier also kindly informs me : "L'an prochain, je compte donner un fascicule de 50 planches de Lémuriens ; un autre de 25 planches de Coleoptères ; un autre de 20 planches d'Hyménoptères ; et probablement le 1er fascicule du 2ème volume de l'Atlas de Botanique."—ED.

*Soc. Geogr. Italiana*, Sep. and Dec. 1888.—“Der vulkanische See Tritriva in Zentral-Madagaskar” (translated from the Editor’s article in *ANNUAL XII.*, pp. 467-472); *Mitt. Geogr. Gesell. z. Bremen*, 1889; pp. 55-63.—“Impressions de Séjour à Madagascar, par X. . . .” *Bull. Soc. Géogr. Commerciale de Paris*, 1889; t. xi. no. 2 et seq.

**Works in Malagasy.**—*The Revised Malagasy Bible.* *Ny Soratra Masina, dia ny Testamenta Taloha sy ny Testamenta Vaovao.* Revision Committee’s Version, 1887; London: B. and F.B.S., 1889. The great and arduous work of preparing and printing a fully revised version of the Malagasy Bible has at length been brought to a close, and in the month of August the first consignment of 500 copies reached the Capital. In the Xth No. of the *ANNUAL*, for 1886, the Chief Reviser, the Rev. W. E. Cousins, described the reasons for making the revision and the principles on which it has been carried out. We need only therefore just now remark that the new version is a thick volume of 1642 demy 8vo pages, and is therefore necessarily a rather heavy and cumbersome book; but the printing is beautifully clear, well spaced, and pleasant to read; and a slight comparison of a few passages from this revision with the same verses from the earlier editions will show at once how very greatly superior it is to its predecessors in clear and idiomatic Malagasy. Hundreds of passages which were formerly obscure—now and then almost meaningless—have become full of life and interest; and what was intelligible before has in very many instances become vivid and graphic. The time is not yet ripe for a full criticism of

the merits and defects of this new revision, but we hope that after sufficient time has elapsed for careful examination, some one or more of our contributors will favour us with an article or articles, with a full discussion of the whole subject.

The following have been issued from the **L.M.S. Press**:—*Loha-teny hana-mpy ny Mpitori-teny; Boky Faharoa* (Fifty-two Outlines of Sermons for Preachers, 2nd Series), edited by Rev. J. Wills; 12mo, pp. 109.—*Ny Sakaizan’ny Mpitandrina sy ny Mpitari-piavahana ao am-piangonana* (Helps for the Pastors and Leaders of Public Worship); by Rev. J. Sibree; 12mo, pp. 132.

From the **F.F.M.A. Press**:—*Lesona amy ny Asan’ny Apositolô* (Lessons on the Acts); by S. Clemes; demy 8vo, pp. 246, with coloured map and diagrams.—*Lesona amy ny Fampivelomana* (Lessons in Midwifery); by Miss Byam; demy 8vo, pp. 48, 12 pages of illustrations done with Mr. Standing’s Pen.—*Toro-lâlana ho any ny Mpitsabo* (Guide to Nurses); by Mrs. Mackay; 12mo, pp. 20.

From the **N.M.S. Press**:—*Physiology Specialy; Fiarana Voalohany* (Special Physiology; First Division); by Rev. Dr. Borchgrevink; 8vo, pp. 100.—*Fihirana, Fanampiny* (Supplement to Hymnal), 66 hymns.

**New Maps of Madagascar.**—*Carte de Madagascar*, dressée par le Père D. Roblet, S.J.; échelle au 1 : 1,000,000. With inset *Plan de Tananarive*; échelle au 1 : 20,000. Size 5ft. 10½ in. by 3 ft. 1 in. H. Lecene et H. Oudin, Editeurs, 17 Rue Bonaparte, Paris. (See p. 62, foot-note, ante.)—*Carte de Betsileo*. (This is advertised by the R.C. Mission, but we have no further information about it.)

## BRIEF SUMMARY OF IMPORTANT EVENTS IN MADAGASCAR DURING 1889.

**Political and Social.**—There is so much that is discouraging to all who wish well to Madagascar, when we glance at some of the public events of the year, that we should almost prefer to leave this portion of our usual brief annual summary a blank. It may however just be said that the misery and distress caused by large armed bands of robbers, noticed in our last issue, has not diminished during this year, but has rather increased. Numbers of villages to the north and west of Imérina have been ravaged, and the congregations and schools utterly broken up; many of the people have been killed, and numbers have been carried away into slavery. In other districts again, the drain upon the population for digging the gold which has been found in many places has also had a like disastrous effect upon educational and religious work. And together with all this, the rapid increase of drinking habits, the growing boldness in the sale of intoxicating liquors, especially the bad native spirits and the noxious foreign rum, and the increase of disease caused by these habits, are additional causes for anxiety to all who desire to see true progress in this country. The evil has now become so great that special attention was given to it at the October meeting of the Union of Imerina Churches, and it was agreed that a petition to the Sovereign should be presented from the Union, asking Her Majesty to graciously use all legal means possible to lessen the drink traffic. The four Protestant Missions labouring in this country are also consulting together as to what can be done in the same direction.

Several Companies have been floated during the year; among these are some for improving internal land and water communication, etc.; to all of which, so far as they may promote the real advance of the country—not

merely adding to the already sufficient wealth of the few, either natives or foreign capitalists, but giving fair *paid* employment to the mass of the people—we heartily wish success.

**New Public Buildings.**—Several important public buildings have been either completed or commenced during the past year, each of which demands a few words of description. First of these is the

**L.M.S. and F.F.M.A. New Mission Hospital.**—The L.M.S. Mission Hospital at Análakely having become increasingly unsuitable and unsanitary in its surroundings, a site has been secured east of Anjánahary, a position about a mile and a half north-north-west of the Capital, for a new building, which is now in process of erection, from funds subscribed by friends of the Medical Mission.

The new Hospital consists of a central block, with entrance hall and stairs, giving access on the north side to a Matron's room, Students' Mess-room, and Lying-in ward for eight beds; on the south side are the Operating room, Bath room, Stores, Lavatory and Dispensary; while across the extreme south end of the block, and on a lower level, are the Out-patient department, cook-houses, etc., arranged on one storey, and so as to give ready access to the other parts of the building.

The upper floor of the central block will contain a Children's ward, a room for the Nurses, and five Private wards, for the use of which an extra charge will be made.

Wings to the east and west will be approached from the entrance hall by corridors, with open arcading on the north side, leading to the larger wards both on the ground and the upper floors—four wards in all, with twelve beds in each. Lack of funds will prevent the western wing being put up at present. When however it is erected, there will be space below

the wards for a large Lecture room. At one side of the Hospital will be placed the house of the Lady Superintendent, and, corresponding with it on the other side, a house for the resident House-surgeon.

Particular care has been taken to make satisfactory provision for the needful sanitary arrangements. In the valley to the north-west is a good supply of water, which it is hoped may be brought up to the Hospital by means of a force-pump.

The buildings are being erected in a substantial manner, with facings of burnt brick and stone dressings, and are designed and superintended by Mr. William Johnson, of the F.F.M.A., to whom the Editor is indebted for the above particulars.

**New London Missionary Society Churches.**—A new church has recently been completed at Antrànobirikra, near the summit of the town of Fianàrantsôa (Bétsiléô). The building has a lofty bell-turret in the main gable, and is a prominent object in every view of the Betsileo capital.—The congregation at Analakely (Antanànarivo) have recently pulled down their place of worship, and have commenced the erection of a much more massive and substantial church, entirely (inside and out) of burnt brick and stone. The new building will be of the same dimensions as the former one (about 84 ft. by 36 ft. internally), but more lofty, with a bell-turret rising to a height of 80 feet in the main gable, and a recess at the south end, lighted by a triplet window. Architect of both these churches, Rev. J. Sibree.

**The Anglican Cathedral.**—This building (dedicated to St. Lawrence, on whose day the west coast of Madagascar was first seen by Joao Gomez d' Abreu, the Portuguese), which has been in process of erection for the last five or six years, was consecrated with much ceremony on Saturday, August 10th (St. Lawrence's Day). The cathedral occupies one of the finest and most central sites in Antanànarivo, at the north-eastern angle of the open space of Andohàlo. It is most substantially and well built of stone inside and out (the founda-

tions being carried to a great depth); and consists of nave and aisles, and apsidal-ended transepts and chancel, with three octagonal towers, one at the north side of the west front, the others forming the projecting portions of the transepts. These however are as yet only carried up to the level of the eaves of the main roof. The total length is 125 feet, breadth at transepts 76½ feet, breadth of nave 54½ feet, height to apex of main gable 52½ feet. Proposed height of western tower to top of spire, 126 feet; transept towers and spires, 116 feet. Cost of building about £8000.

The interior has a stately and impressive appearance, especially in looking from the chancel to the four large lancet windows of the main front. But the interior effect looking east is greatly marred (at least in our humble opinion) by the dark and bare appearance of the blank apse walls, without any windows; and by the unfortunate position of the twin towers, at the transepts, instead of at the west front, quite spoiling the interior effect of the transepts; and also by the strange chamfered courses of a great part of the internal and external walling, a style of finish surely never intended by the architect, and probably due to the want of acquaintance of the builder with Gothic detail. It is also unfortunate that the church has not one of its three projected towers and spires yet completed, and so has an unfinished appearance externally. Architect, Mr. Wm. White, F.R.I.B.A.; builder, Mr. Anker.

**Anglican Mission Church.**—A small but handsome stone church was dedicated on Oct. 31st at Ramainàdro, in the Imàmo province. This has been erected as a memorial to the late Mrs. Kestell-Cornish, wife of the Bishop, from designs by Mr. Sedding, under the superintendence of the Rev. E. O. MacMahon.

**The Anglican College Library.**—This is a massive and picturesque stone building connected with St. Paul's College at Ambàtoharàna, and consists of several class-rooms and other apartments, with a long hall over them running the full length of the

building. At the west end is a massive tower, with high-pitched spire-like roof of red tiles. Architect, Mr. Butterfield, F.R.I.B.A.; the work has been admirably executed under the supervision of the Rev. F. A. Gregory, M.A.

**Roman Catholic Observatory.**—The Jesuit Mission in Madagascar is now erecting a substantial building of brick and stone on the summit of a hill called Ambôhidempona, about two miles east of Antananarivo, on a site granted for the purpose by H.M. the Queen. This is to be devoted to the purposes of scientific observations of various kinds, chiefly astronomical and meteorological. The building is in the form of a T, the top bar (about 100 ft. long) running north and south,

and the shorter limb pointing east; each of the three ends terminates in a dome, and the centre has a revolving dome to hold the large telescope still (Nov.) in process of construction at Paris. A transit instrument, a smaller telescope, and apparatus of all kinds—barometers, thermometers, chronometers, sun-light registers, wind- and rain-gauges, etc.—are already at work in the temporary buildings, under the superintendence of a skilled observer, the Rev. Père Colin, S.J., the Director of the Observatory. We may therefore confidently expect much valuable scientific work from this well-equipped establishment, when all its apparatus is fixed and in full working order.

## DAILY TABLES (WITH AVERAGES) OF THE TEMPERATURE AND RAINFALL, 1889.

THE observations contained in the following tables have been taken at Fàravôhitra (*vide* ANNUAL, 1887, p. 396).

The first column indicates the day of the month; the second, the rainfall for the 24 hours ending at 8 a.m.; the third, the temperature during the night; the fourth, the average for three years; the fifth, the highest point touched during the day, and the sixth gives the average for three years.

The greatest heat registered was 83° F., on Nov. 24th, and the lowest 42° F., on June 10th and July 31st. September 28th was a remarkable day. The minimum before sunrise was 50° F., and the temperature only rose to 56° F. during the day. The day before it was 71° F., and the following day 67° F.

The average heat of the last six days of October in 1888 was over 81° F., while that for the same days of this year was only 69.6 F. There has been an absence of severe storms; and only three earth-tremors have been noticed. They occurred within a few seconds of each other on the afternoon (4.40 p.m.) of Feb. 18th.

The rain from the 19th to the 28th of February was continuous; there was a fall of 10.96 in. on those days, and a strong westerly breeze blowing at the time banked up the water. Thousands of people were employed in repairing the breaches made in the embankments of the River Ikôpa, and for some days it was feared that the whole of the vast rice-fields on which half of Imérina subsists would be destroyed. The record for October shows the smallest amount for the 9 years, being only .39 in., which is only about a third of the smallest amount for any other October.

For easy comparison we append the rainfall of the past 9 years:—

1881 = 42.12 in.	1884 = 68.86 in.	1887 = 65.08 in.
1882 = 41.08 „	1885 = 52.19 „	1888 = 53.84 „
1883 = 57.65 „	1886 = 47.28 „	1889 = 49.61 „

Average for the 9 years 53.08.

J. RICHARDSON.



# DAILY TABLES OF TEMPERATURE AND RAINFALL FOR 1889.

JANUARY.						FEBRUARY.						MARCH.					
Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.
1		62	64	82	76	1		61	64.6	79	77.3	1	.30	63	63	78	77.3
2		59	62.3	73	72	2		61	64.6	77	77	2	.30	63	64.3	73	77
3		57	60.6	74	70.6	3		62	64.6	77	76	3	.03	61	63.3	73	77.6
4		60	61.3	72	71	4	.11	62	63.6	74	75	4	.03	63	63.6	76	79
5	.02	59	61.3	71	71.3	5		56	62.6	73	75.6	5		63	63.3	72	76.3
6	.01	58	60.3	73	74	6		59	61.3	76	74.6	6		58	60.6	71	74
7		59	62	81	76	7		63	61.6	81	78	7		56	59.3	69	74
8		63	63.6	81	73.3	8	.04	61	62	78	77.3	8		58	61	70	75.3
9	.30	62	62.3	80	75.6	9	.03	57	61.6	75	77	9		53	60	69	74
10	2.16	60	62.6	77	76	10		60	62.3	77	77	10		56	61	72	73.3
11	1.10	59	63	70	74	11		63	63.6	82	77	11		55	61	71	76
12	.02	58	63.3	69	73.3	12	.10	64	63.6	82	78.3	12		56	60.6	71	74
13	.03	58	61.6	72	74.6	13		64	63	80	78	13		56	60.6	74	72.6
14	.19	58	62.3	73	73.3	14	.23	65	64.3	80	78	14	.19	61	61	73	70.3
15		62	63	77	74	15	.30	63	63.3	78	76.3	15		63	60.6	80	76.6
16	.67	60	62.3	78	73	16	.42	63	61.3	79	76.3	16	.63	62	58.3	77	70.6
17	.38	62	61.3	77	73.3	17	.17	63	62	78	76.6	17	.52	62	60.6	76	71.6
18	1.44	61	62	74	73	18		63	61	80	77	18	1.20	62	60	76	74.3
19	.24	62	63.3	75	73.6	19	2.14	62	61.6	77	78.3	19	1.85	60	57.5	77	74
20	.46	63	63.6	75	74.6	20	.92	62	62	74	74.6	20	.41	62	61.3	76	76
21	.94	59	62.3	73	75.3	21	.37	61	61.3	73	75.6	21		59	60.6	77	76.6
22	.35	61	63	77	77	22	1.10	62	62.3	74	73.3	22	.05	62	62.3	74	74.6
23	.16	63	65.3	81	79	23	1.04	62	62	75	71.3	23	.07	59	59.6	72	71.6
24	.61	62	65.3	72	75.3	24	1.24	63	63	77	75	24	.14	56	56.3	70	68.6
25	.03	60	64.6	73	76.3	25	.48	62	62.3	78	75	25		59	58.3	72	69.3
26	.02	60	64.6	76	77	26	.49	62	63	77	74.6	26		60	59	74	73
27	.13	62	64.3	81	77	27	1.25	62	62.3	78	75.6	27	.58	62	59.6	76	73.6
28	.05	63	64.6	79	76	28	1.55	63	62.6	76	77	28		62	60.3	78	74.3
29	1.20	63	64.3	77	73							29	.02	62	61.3	73	73.6
30	.75	62	64.3	77	75.6							30		60	60	73	72
31		61	64	78	76							31		61	59.6	73	71.3

Tot. 10.78in. Aver. yrs. 12.40in. 12.36in. Aver. yrs. 9.183in. 6.32in. Aver. yrs. 8.17in.

APRIL.						MAY.						JUNE.					
Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.
1		59	58	73	71.6	1		60	56.6	71	69.3	1		50	52	63	65
2		60	59.6	74	72	2		59	57	71	68.6	2		50	50.3	65	65
3	.03	59	58.3	74	72.6	3		59	56.3	68	68.3	3		47	47.6	65	63.3
4	.08	59	57.3	73	72	4		54	54.3	69	68.6	4		53	49.6	63	63.6
5	.01	60	59	70	70.6	5		50	55	68	71	5		49	49.6	64	65
6		60	59.3	73	73	6		56	56	68	69.6	6		49	51.3	65	64.6
7		60	60	71	71.6	7		55	56	65	69.3	7		46	48	61	62.6
8		54	56.3	68	69	8		49	54	64	69.3	8		45	45.6	60	62.3
9		58	58.3	59	70	9		51	55.3	66	69.6	9		47	47.3	60	63
10		59	58.6	68	70	10		51	55.3	63	69	10		42	48.3	62	64.3
11		55	57.6	67	68.6	11		51	54	67	67	11		52	50.3	67	64
12		55	55.6	60	69.3	12		52	52.3	68	67	12		46	48.3	59	60.6
13		59	58	69	68.3	13		53	53.6	67	65.6	13		49	50	59	60.6
14		54	56.3	68	68.3	14		52	53.6	67	66.3	14		49	47.6	59	59
15		56	57	69	69.3	15		56	54.3	68	66.6	15		49	47.6	58	57.3
16		58	57	68	69.3	16		56	55	71	67.6	16		42	42.3	62	61.6
17		57	57	69	70	17		54	54	71	68	17		46	45.3	61	63.6
18		57	56.6	68	67.6	18		55	53.6	68	68.6	18		45	47.3	61	61.6
19	.02	58	56	69	67	19		56	54.3	68	68	19		47	47	63	61.3
20	.01	58	55	68	66	20		53	53	67	68.6	20		49	47.3	61	60.3
21	.07	55	54.3	70	68.6	21		53	52.3	67	69	21		52	49.3	66	62.6
22		55	54.6	68	68	22		54	53.3	67	66.6	22		50	47.3	68	63.6
23		57	56.3	70	69.3	23		52	52.6	68	65.6	23	.02	56	50	63	62.6
24		58	57	70	69.3	24		53	52.3	67	65.6	24	1.09	49	49.6	63	64
25		55	54.6	70	70	25		50	50	64	65	25		52	49.3	60	62.3
26		57	55.3	74	70	26		47	49.6	65	66.3	26		47	47.6	58	60.6
27		59	55.6	76	71	27		49	51.3	65	66	27		47	48.6	58	60
28	1.65	59	56.3	74	70.6	28		50	50.6	64	64.3	28		46	48	56	57.6
29		58	55	73	69.3	29		50	50.6	64	65	29		47	47.6	57	59
30		58	55.3	71	68.6	30		51	51	65	64.3	30		46	45.6	57	58.6
31						31		51	50.3	66	66						

Tot. : 1.87in. Aver. yrs. 1.53in. 0. Aver. yrs. 0.75in. 1.11in. Aver. yrs. 1.32in.

# DAILY TABLES OF TEMPERATURE AND RAINFALL FOR 1889.

JULY.						AUGUST.						SEPTEMBER.					
Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.
1	.02	46	47.6	57	59	1		46	45	60	60.3	1		46	49	62.5	62.83
2		48	48.6	57	58.6	2		47	46	64	62	2		45	49.3	63	65.6
3	.01	47	47	56	58.3	3		49	46	62	62.6	3		45	48.3	63	64.6
4	.07	43	47.3	57	61	4		52	48.3	62	62.6	4		48	48	64	63.3
5		46	49	60	63	5		45	47.6	63	62.3	5		48	49.3	68	65.3
6		45	46.3	59	59.6	6		50	48.6	66	62.3	6		52	50.3	65	64
7		46	47.3	59	60.6	7		47	48	64	61.3	7		45	46.3	69	64.6
8		46	47.6	62	60.6	8		50	46.6	63	62	8		48	46.6	65	64.3
9		45	48	63	62	9		50	47.6	60	60.6	9		48	48.3	66	66.3
10		48	48.6	61	60.3	10	.01	50	47.6	59	60.3	10		48	48	68	65
11		51	49	64	62.3	11		44	45.6	59	60	11		54	51.6	70	67.6
12		51	49.3	66	63	12		45	46.3	57	58	12		54	52	74	67.3
13		53	50	67	63	13		47	49	59	59.3	13		56	51	68	66.6
14		48	46.3	63	63.3	14		45	47	61	59.6	14		53	50	68	67
15		46	47.3	62	64.3	15		49	48.6	61	61	15		54	50.6	74	68.6
16		45	49.3	62	63	16	.04	45	44.6	61	61.6	16		52	50	66	66.6
17		45	48.3	68	64.3	17	.12	50	48	61	62.3	17		48	48.3	63	65.3
18		49	49.3	67	63.6	18		48	48	61	64	18		47	48	63	64
19		51	48	64	62.3	19		46	46.6	59	64.3	19		47	47.3	66	67
20		47	46.6	62	61	20	.03	47	46.6	60	63	20		49	48	65	68.3
21		48	46.6	61	62	21		47	49	60	61	21		48	49.6	68	69
22	.02	51	49	61	60.6	22	.01	49	49	60	61	22		51	52.6	70	70
23		50	49.3	63	62	23		49	48	62	59.3	23		52	53	69	69.3
24		50	49.6	60	62	24	49(?)	49	49	61	60.6	24		54	54.3	69	70
25		46	48.6	60	61.6	25		48	48.6	61	63	25		52	53	70	70.3
26		50	49	64	62.3	26	.03	48	48.6	61	62.3	26		52	52.6	72	71.6
27		50	48.3	65	63	27		51	50	63	64	27		57	55.6	71	73.3
28		50	48.3	63	61	28		50	52	63	65.3	28	.38	50	54.3	56	70.3
29		51	48.6	61	60.6	29		49	51.3	65	64.6	29	.07	50	55	67	73.6
30		48	47.6	60	61.3	30		49	49.3	63	64.3	30	.01	54	56.6	71	75.3
31		42	45.6	60	61.6	31		44	48.3	63	64.6						

Tot.: .13in. Aver. gyrs. .19in.

.27in. Aver. gyrs. .19in.

.46in. Aver. gyrs. .94in.

OCTOBER.						NOVEMBER.						DECEMBER.					
Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.	Date.	Rain.	Min.	Aver. 3 yrs.	Max.	Aver. 3 yrs.
1		56	57.6	74	74	1		54	57.3	72	76.3	1		57	57.6	72	74.3
2		56	57	73	74	2		52	56	73	75	2		55	59	71	75.6
3		51	54.6	67	67.3	3		56	56.6	81	78.3	3	.53	52	57.3	79	77.3
4		52	52.6	69	66	4	.10	57	57	78	77.3	4		61	59	80	79
5		55	53	74	69	5	.02	59	58.3	78	80.3	5	.72	60	59	80	79.3
6		55	53.3	70	67.3	6	.30	60	59	81	81.3	6	.15	60	58.6	81	77.3
7		52	52.3	70	67.3	7	.14	58	58	74	78	7	.75	61	59.3	76	78
8		55	52.3	72	70.3	8		60	59.3	75	77.3	8		60	57.6	76	75.6
9	.01	54	52.6	70	70.6	9	.39	60	59	79	75.6	9		58	58.6	80	78.6
10		53	55	66	67.6	10		57	56.6	77	72.3	10	.02	61	60.6	79	78.3
11	.02	53	54.3	70	71.3	11		55	55.6	75	72.6	11	.80	58	58.6	78	78.3
12		52	53.6	70	69	12		59	55.6	77	73.6	12	.69	60	57.6	73	75.6
13		54	54.6	68	70.6	13		60	54.6	75	73.3	13	.40	57	58.3	75	77
14		52	54.3	70	71.6	14		60	55.6	79	77.3	14		58	58	74	78
15		56	57	80	77	15	2.05	61	58.3	79	75	15	.01	60	60.3	80	80.6
16	.25	57	58.6	70	75.6	16	.14	59	57.3	77	78	16		58	59	81	79
17	.03	57	57.3	69	72.3	17		58	58	79	73.3	17	.69	60	60.6	81	78.6
18	.08	54	55.6	68	69.6	18		60	59.3	77	77	18	.83	60	60.6	82	78.3
19		53	67.3	69	70	19		57	56.6	76	78	19	.10	59	59.3	80	76.6
20		52	53.3	69	71.6	20		55	57	76	76.3	20	1.20	61	59.6	80	77
21		52	55	70	73	21		54	57.3	73	77	21	.18	62	59.3	80	76
22		50	53.3	71	71.6	22		54	57.3	75	77.3	22	.28	61	59	74	71.6
23		51	53	75	73.6	23		56	58.6	77	78	23		57	56.6	77	74
24		54	55	71	72	24		57	58.6	83	78.3	24		58	58.3	78	74.3
25		53	54	67	71	25	.57	57	58	81	75.6	25		60	58.6	78	75.3
26		52	55.6	66	75.3	26	.03	60	59	80	74.6	26	.10	62	60.3	78	78.3
27		51	56.6	68	74.6	27	.51	60	58	77	75.6	27	1.15	61	61.6	78	77.3
28		53	55.3	70	73.6	28		56	58	71	72	28	.79	60	61.3	78	77.3
29		53	57	70	77	29		55	58.6	72	77.3	29		61	61.3	77	76
30		49	55.6	72	76.6	30		55	58.6	70	75.3	30		59	59.6	80	77.6
31		52	55.6	72	77							31	.32	60	60.3	78	78.5

Tot.: .39in. Aver. gyrs. 2.85in.

4.30in. Aver. gyrs. 6.26in.

11.62in. Aver. gyrs. 10.27in.

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

2.

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No. XIV.—CHRISTMAS, 1890.

(PART 2. OF VOL. IV.)

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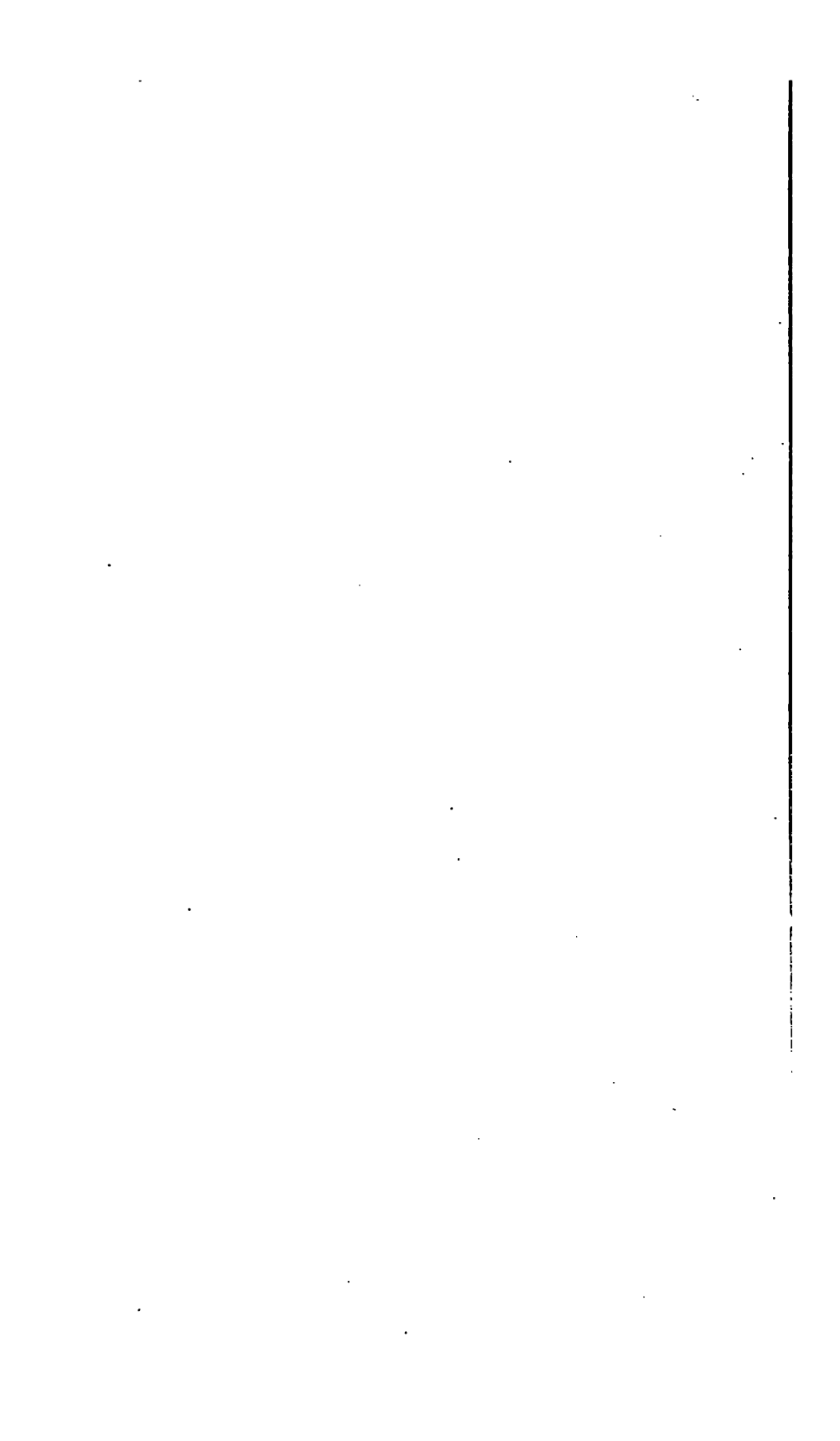
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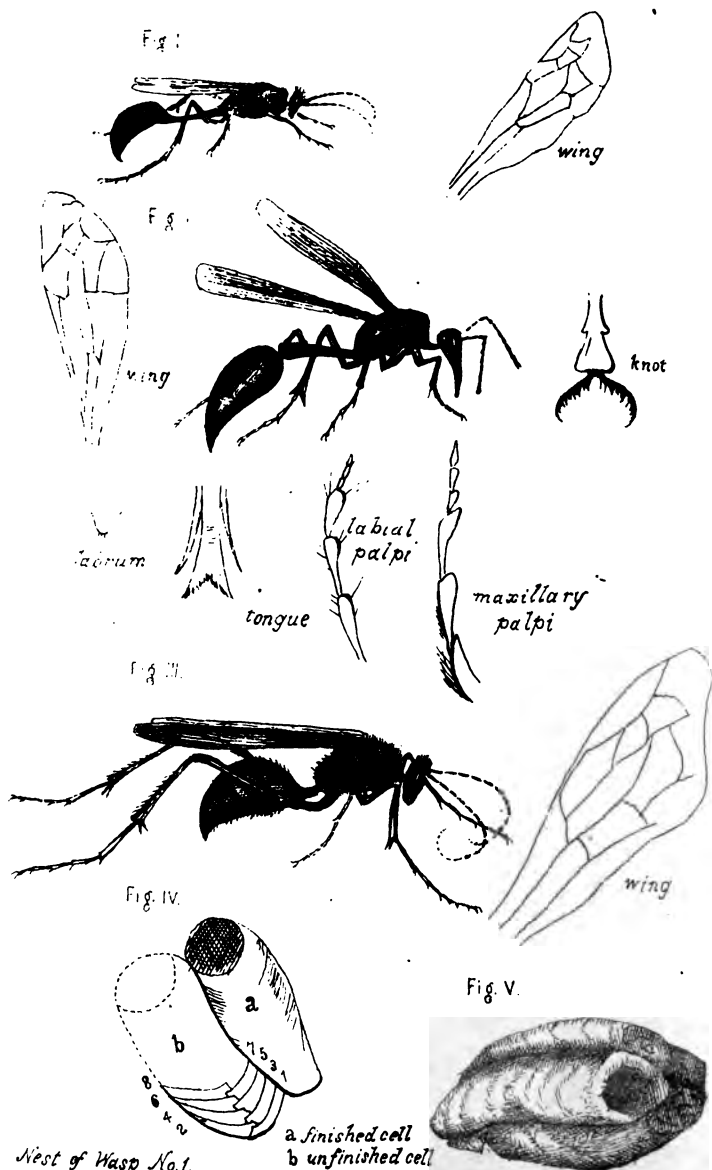
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# SOME OF THE SOLITARY WASPS OF MADAGASCAR.



*Nest of Wasp No. 1. in progress*  
*Nos. 1, 2, 3, 4, 5, &c., show progress of work. Finished Nest of Wasp No. 1.*



*Samuel H. Moore,  
Michigan.*

THE  
ANTANANARIVO ANNUAL  
AND  
MADAGASCAR MAGAZINE.

*RECORD OF INFORMATION ON THE TOPOGRAPHY AND NATURAL PRODUCTIONS  
OF MADAGASCAR, AND THE CUSTOMS, TRADITIONS, LANGUAGE,  
AND RELIGIOUS BELIEFS OF ITS PEOPLE.*



EDITED BY THE

REV. J. SIBREE, F.R.G.S.,

AND

REV. R. BARON, F.L.S., F.G.S.

*Missionaries of the L.M.S.*



*No. XIV.—CHRISTMAS, 1890.*

(PART II. OF VOL. IV.)



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1890.

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THE  
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AND  
MADAGASCAR MAGAZINE.

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THE MADAGASCAR POISON ORDEAL OF  
'TANGENA:'

*AN ACCOUNT, HISTORICAL AND PHYSIOLOGICAL.\**

ORDEALS of various kinds have been devised in certain stages of civilization as a means of testing the guilt or innocence of suspected persons. Records have come down to us of the widespread existence of this usage in remote antiquity; and in more recent times ordeals by fire, water, and wager of battle were prescribed by law and sanctioned by religion throughout the whole of Europe. Ordeal by poison is, however, peculiar to Africa, although philology renders it probable that the same practice may have prevailed among the progenitors of our own race in prehistoric times.

It is to be observed that these ordeals are chiefly employed for the detection of witchcraft, by which African jurists understand the use of poisonous drugs for evil purposes. It is in fact equivalent to the *pharmakeia* of the Greeks; and as the terms *pharmakos* and *veneficus* were applied by the ancients to signify alike a physician, a sorcerer, and a poisoner, so in many of the African languages the same peculiarity obtains. This arises from the fact that among these and other primitive races the physiological effects of drugs, whether poisonous or medicinal, are ascribed to some magical power, either inherent in the substance itself, or imparted to it by sorcery. Medicines are thus employed as charms both for causing and curing disease. With such superstitious notions of the properties of poisons, it

\* The following paper is reproduced from an article by Dr. A. Davidson, under a slightly different title, in the *Journal of Anatomy and Physiology*; vol. viii, pp. 97-112.—EDS,

was only natural that they should ascribe the differences in the results observed to follow their administration to a sort of discriminative faculty or intelligence possessed by the substance, and thus have come to employ poisons in the detection of occult crimes, such as witchcraft.

Although we know that the custom of ordeal by poison prevails over a great part of the continent of Africa, we are as yet unfortunately ignorant, in most instances, of the poisons employed by the different tribes;\* and, with the exception of the Calabar bean, none of them have been subjected to a satisfactory examination. This is to be regretted from a medical as well as a scientific point of view, as remedial agents of high value will probably be found among these powerful ordeal poisons.

As the advance of civilization has now abolished the use of one of the most celebrated of these ordeals—the *Tangèna* of Madagascar—it seems desirable to put on record the mode of administering it and its effects on man, while such information may still be obtained from those who were acquainted with its employment, and had witnessed or experienced its effects. Shortly before my arrival in the island, in 1862, the *Tangèna* ordeal was abolished; but as it happens that an officer, attached to the Hospital during my residence in Madagascar, was formerly, from hereditary office, an administrator of the poison, I have in this way had the opportunity of obtaining trustworthy information upon this subject.

*Historical.*—There is no certain evidence when or how the *Tangèna* first came to be used as an ordeal in Madagascar. We know that some such method of trial has long been practised in the island. The testimony of Flacourt, who visited Madagascar in the middle of the 17th century, is conclusive upon this point; but if his statements are to be considered as strictly accurate, some other poison must at that time have been used in the district visited by him.†

Ordeals of other kinds, such as that by plunging the hand into boiling water,‡ were at one time practised in some parts of the country; and there seems reason to believe that the Tan-

\* Dr. Livingstone observes that this custom "is common among all the Negro nations north of the Zambesi." The natives of that part of Africa employ a plant called *Gobo*, which is possessed of purgative and emetic properties.

The poisonous juice of the *Erythrophloeum guineense* is employed for the same purpose on the coast of Guinea, and the *Physostigma venenosum* by the natives of Calabar. In the inland regions near the equator, according to Du Chaillu, the natives use as an ordeal the root of a plant or tree called *Alboudow*, conjectured by Prof. Torrey of New York to be a species of *Strychnos*.

† He says that the Malagasy administer for this purpose, "Maurechetsi, qui est de quelque sorte d'herbe ou de racine qui est poison et fait mourir celui qui en mange" (*Histoire de la grande île Madagascar*).

‡ See ANNUAL II. pp. 94, 95 (*Reprint*, pp. 221, 222); and IV. p. 421.—EDS.

gèna was not generally or frequently employed until the beginning of the present century.

It was seldom had recourse to in ordinary judicial cases, in which more rational modes of trial were followed, but was reserved for the detection of those guilty of infamous crimes, for the discovery of whom ordinary evidence either could not be obtained, or would not suffice. Such crimes were treason and witchcraft, and indeed the latter comprehended the former; and for the detection of these it was administered either by order or permission of the sovereign, and in the presence of officers appointed by him or her. An experiment was, however, frequently enough made, *in corpore vile*, in the instance of individuals suspected of minor offences, or in order to decide which of two or more persons was guilty of a crime known or believed to have been committed by one or other of them.

In the former case, a dog having been selected as a substitute for the suspected party, the Tangèna was given to the animal in the same way as when administered to a human being. When again it was given with a view to decide between two or more accused persons, then dogs of similar size and condition were selected, and the party whose representative first succumbed to the poison was treated as guilty.

*Mode of administration.*—The ordinary mode of administration was as follows:—Two Tangèna almonds, or nuts, as they are often styled, were taken, and the half of each rubbed down with water. This custom of taking the half of two different almonds was adopted in order to increase the probabilities that the poison administered should be only of the average strength.

The suspected party now ate a little rice, and was afterwards made to swallow three small pieces of fowl's skin, and this was followed by the Tangèna emulsion. After a few minutes, varying however according to the result desired by the administrator, tepid water was given in considerable quantities, and violent, long-continued vomiting usually ensued. If the three pieces of skin were discharged, the suspicion of guilt was dismissed, as a rule,\* and the friends of the unfortunate person were then left to do their best for his recovery. Not unfrequently, however, the poison operated more as a purgative than as an emetic, and then it often happened that with or without the stigma of crime (according as the pieces of skin were retained or rejected) the case terminated fatally. It can easily be understood that state policy readily attained its crooked ends by the administration of the Tangèna. It was observed that those who might be called "the opposition members" of the govern-

\* I say "as a rule," for some other omens of an unfavourable kind, which I do not require to detail here, occasionally affected the result.

ment seldom recovered from the ordeal. So far as can be ascertained, it proved fatal in as many as one in ten cases, when given with no hostile intention. As it was often administered to whole villages at once, it will be understood that the numbers destroyed by this poison were immense.

The points especially affecting the result seem to have been :—

(a) The colour of the kernel; the very red ones are said, and probably with truth, to be more poisonous than the less ripe ones, which are whiter in colour. (b) The amount administered was in every case enough to prove fatal, if not speedily rejected. From what I have learned from the natives, as well as from the results of my own experiments, I have no doubt that the weight of one almond is amply sufficient to poison an adult, if not got rid of by vomiting. (c) If administered on an almost empty stomach, it was more dangerous than when a larger quantity of rice had been previously taken. (d) A great deal depended upon the seasonable administration of diluents. Experience enabled the expert to judge the time when to give drink, and the amount required to affect his object, whether that might be the death or the recovery of the victim.

*Symptoms.*—As the result of a careful examination of several who have been themselves subjected to this ordeal, and of many who have witnessed its effects on others, I conclude that the symptoms produced by it when given in poisonous doses, in the manner just described, are as follows:—A peculiar numbing tingling sensation is felt in the mouth and fauces, due to its topical action. Several of those who have undergone the ordeal have assured me that they experienced a similar feeling more or less over the whole body, but especially in the hands. This point is important, for my experiments on warm-blooded animals have not indicated any noticeable disturbance of sensation. Sickness ensues, with vomiting—intense, distressing and repeated—first of the contents of the stomach, then of bile and mucus. The vomiting is attended by a feeling of great debility and anxiety. If the greater part of the poison has been thus ejected, the patient recovers perfectly within a short time. Where more of the poison has got into the circulation the sufferer is said to feel giddy. The Malagasy, however, use their word for vertigo in a loose sense. I am therefore inclined to think that partial paralysis of motion with unsteady gait may be the condition indicated. The patient, under the influence of the Tangèna, staggers if he attempts to walk, is unable to support his own weight, and falls down helpless and paralyzed. Although the mind is usually clear, yet delirium occasionally occurs. The patient in cases tending to a fatal issue becomes unable to rise. In other instances, according to the testimony of observers, he



lies as if asleep, and when roused answers like a drowsy man, then lapses back into his former condition. In other cases the patient remains conscious to the last, without either stupor or delirium. Death is preceded by spasmodic movements of the fingers and toes. Purging is a bad symptom, and worse the more urgent it is. Almost none recover when the stage of stupor has been reached.

The natives know of no antidote for this poison, but they think that the application of cold, and draughts of lemon-juice are of service.

I remark upon the condition of sleepiness described above, as of pretty frequent occurrence in the advanced stage of poisoning by this substance, that I do not believe that my informants were able to distinguish between narcotism and a state of prostration. I have, however, given their statements literally.

Upon this point I may further observe that my experiments on the lower animals do not seem to countenance the opinion of some, that there is any narcotic property in the substance. There is only one exception to this statement of the result of my experiments. In two instances in which I administered the Tangèna to fowls, they appeared to be overcome by sleep.

No post-mortem examination has been made of those who have died by Tangèna.

*Botanical note.*—The *Tangèna*, or *Tanghin* (*Tanghinia venenifera*, Poiv.; *Cerbera tanghin*, Hooker), is a tall shrub of the natural Order Apocynaceæ. The poisonous part of the plant is the fruit, which is a drupe, about the size of an apple. The colour of the fruit is a greenish-yellow; the external pulp which surrounds the kernel is soft, somewhat grey in colour, destitute of smell, and possessed of a slightly bitter disagreeable taste. The kernel is hard, ligneous, and brown, and elliptical in shape. With this is the almond, which is divided into two cotyledons, of the consistence of a newly-plucked bean, varying in colour from a white to a brownish-red, and weighing from forty to seventy grains. For a minute botanical description of the tree and its fruit, the reader may consult Hooker's *Botanical Miscellany*, iii. 290. The Tangèna grows abundantly in shrubby places on the east coast of Madagascar.

*Chemistry.*—Two crystalline principles are said to have been obtained from the Tangèna: the one, the bitter principle, *Tanghinia*; the other, the poisonous principle, which has been named *Tanghinine*, and is described as transparent plates obtained by ether, insoluble in water, bitter and poisonous. I have no access, however, to any account of the process followed in the separation of these; and I shall state in a few words what little

I know upon this point.

(a) The kernel contains a large quantity of an inert, bland oil, and if rubbed up with water it forms a white emulsion.

(b) Its active principle is insoluble, or at least nearly so, in water, readily soluble in alcohol, ether, and chloroform, as is proved by the activity of the extracts made by means of these solvents. I have obtained by means of chloroform impure crystals, in the form of long, flattish needles, arranging themselves under the microscope as if branching out at acute angles from a centre.

(c) By treating a carefully prepared alcoholic extract with water, a white precipitate is obtained.

In my experiments, I have used the simple emulsion, and extracts made with ether or alcohol, and in a few instances the impure crystals mentioned above.\*

*Physiological action.*—Results of Experiments on the lower Animals. The Tangèna proves fatal by absorption, however introduced, whether into the alimentary canal, the serous membranes, or into the cellular tissue. It acts less actively if swallowed, because partly got rid of by vomiting. When a concentrated solution of the poison is applied to the frog's foot, it is slowly absorbed and causes death. Ligature of the blood-vessels prevents or delays its action.

[Here follow, in Dr. Davidson's original paper, several pages of minute description of the results of experiments upon various animals by administration of the Tangèna; but as they would be of little interest except to physicians, they are here omitted, a brief summary only of the general effects of the poison being given.—EDS.]

*General conclusions.*—(a) The Tangèna must be classed among cardiac poisons. It uniformly causes death by arresting the action of the heart.

(b) It does not act on the heart through the vagus nerve.

\* I have given the above as it was originally written. As my object was not to investigate its chemical properties, but its physiological action, I had neglected to note down the steps of the process by which I obtained the crystals alluded to, and cannot now add anything from memory. The recent work by Chatin (*Recherches pour servir à l'histoire botanique, chimique et physiologique du Tanguin de Madagascar*. Par Joannes Chatin, Paris; 1873) upon this poison would render it probable that the active principle is not a neutral body, but an alkaloid, which he obtained thus:—Having first got rid of a considerable part of the oil by pressure, he made an ethereal extract, which was treated by warm alcohol, and on evaporation left a residue which he thus describes: "La liqueur évaporée dans la vide laissa un résidu assez considérable, brunâtre, légèrement amer et comme granuleux en certains points; facilement fusible, ce produit, chauffé au contact de l'air, se comportait comme un corps gras. Le produit ainsi obtenu était toxique; je le traitai alors par de l'acide acétique étendu, et j'obtins, par l'évaporation des liqueurs, une petite quantité de poudre blanchâtre, assez soluble dans l'eau, beaucoup plus soluble dans l'alcool. Elle fut en conséquence traitée par ce dissolvant, et, par l'évaporation dans la vide, elle donna des petits cristaux, d'un blanc vitreux et appartenant au système diclinorhombique" (p. 30). This subject will still require further investigation.

When applied to the exposed heart, its rapidity of action is remarkable. The fact that it arrests the pulsations of the excised heart of the frog is conclusive proof that its influence, when topically applied, is direct, either on the muscular substance, or the muscular substance *and* cardiac ganglia.

(c) There is sufficient reason to believe that the Tangena acts on the spinal cord, producing paralysis and diminishing reflex action.

(d) Voluntary motion is abolished, and the irritability of the motor nerves lessened by the poison. When it acts through the circulation in mammalia, sensation is not remarkably affected; muscular contractility is very much diminished. More exact knowledge of the degree and order in which these various functions are affected can only be obtained by carefully performed experiments made in Europe, where the more delicate electrical instruments can be had.

(e) It is exceedingly fatal to man, in doses of thirty grains of the kernel, if not promptly ejected.

(f) It causes a numb tingling sensation in the part with which it comes into contact, and also throughout the body.

(g) It is powerfully emetic and purgative, produces great nausea and debility, paralysis of motion, occasionally delirium, narcotism, and perhaps vertigo.

(h) It may be inferred to cause death in man, as in all other animals, by tetanizing the heart.

A. DAVIDSON, M.D.



X  
THE SILK OF MADAGASCAR.—At the beginning of last year an enterprising French firm, MM. Horens and Iribe, established a small silk factory at Antananarivo, Madagascar. This is the first time that anything like perfected methods have been applied to the native silk. Up to the present the Malagasy have only treated the cocoons by carding. The silk of Madagascar is distinguished by a greyish tint and a certain roughness of texture which is due, not to the nature of the silk, but to irregularities in the thread. The specimens of silk which Messrs. Horens and Iribe have forwarded to Europe, although perhaps not all that could be wished, are very promising; and, considering the short time the factory has been established, the results already obtained are extremely satisfactory. (*British Trade Journal.*)

## MADAGASCAR ORNITHOLOGY:

*MALAGASY BIRDS ARRANGED ACCORDING TO THE NATURAL ORDERS, WITH NOTES ON THEIR HABITS AND HABITATS, AND THEIR CONNECTION WITH NATIVE FOLK-LORE AND SUPERSTITION.—PART II.*

*(Continued from ANNUAL No. XIII.)*

## CHAPTER IV.—THE PASSERIFORMES OR PERCHING BIRDS.

THE third Order into which Birds are divided by most naturalists is the one which contains that large and delightful group of feathered creatures which are the principal songsters of the woods, and which, as the scientific name of the Order implies, are found chiefly in the forests, or at least where there are trees. As will be seen by referring to the tabular arrangement given herewith, there are no less than 60 species of Perching Birds found in Madagascar, the greater proportion of them being only seen in the lower and wooded regions of the island; although a few, as will be noticed presently, also inhabit the barer regions of the upper plateau, with their scanty clothing of trees and shrubs.

The greater number of these Perching Birds are of somewhat sombre plumage of browns and greys, with the exception of the Sun-birds, the Orioles and the Weaver-birds. As shown by the tables, Mr. R. B. Sharpe divides the Passeriformes into two great Sections of (a) Singing and (b) Songless birds. The latter contains 10 Families, all *unrepresented* in Madagascar; but in the former are 27 Families (arranged under 3 Sub-orders), and of these 27, 16 have representatives in this island, several of them, especially the Thrushes and Warblers, including many species. Among the Madagascar Passeres, therefore, we find Orioles, Shrikes, Flycatchers, Thrushes, Warblers, Babblers, Bulbuls, Butcher-birds, Sun-birds, Swallows, Weaver-birds, and Starlings. Of the Crows, Titmice, Wagtails and Larks, there is a single species of each Family; and the Order includes also two species of birds (*Philepitta*) which are nearly allied to the Paradise-birds of far-off New Guinea and the Moluccas. Other Families of the Order, such as the Flower-peckers, Chatterers, Tanagers, Finches and Hang-nests, as well as all those of the second Section, the Lyre-birds, Ant-thrushes, Manakins, and others, have no representatives in Madagascar.

Many of the birds found in Madagascar are by no means deficient in the power of producing sweet sounds of a very pleasing character, and in considerable variety of note; and, as we shall see, there are some few whose song has even been considered to resemble that of our European nightingale. In several accounts which have been given by travellers of their journeys through various parts of the country, reference is made to the silence of the woods, to the paucity of animal life, and to the very few sounds heard either from beast or bird. Now while it is quite true that the mammalian life of Madagascar is very scanty, I am disposed to think that these descriptions have been somewhat exaggerated, and I believe the reason is, that most journeys have been

taken during the colder season, when the woods are comparatively silent. But they certainly are not so at all times of the year; and I find in a journal of my own the following remarks upon the abundance of bird-life in the woods, when travelling from Mahanoro to Imérina in the month of November, 1883:—"I noticed that the forest was by no means so silent as I had remarked at other times when passing through it. Former journeys, however, were made in the colder winter months of the year, but now that the warm weather is approaching, some bird or other was almost always heard. Every quarter of a mile or so we heard the constant and noisy call of the Cuckoo (*Kankàfotra*), *kow-kow*, *kow-kow*, repeated three or four times; then the flute-like call of another Cuckoo, the *Tolôho*, whose mellow notes were heard all the way from the coast to the forest; also the chirp and whistle of the *Railovy* or King-crow, as well as the incessant twitter of many small birds. Then came in now and then the long-drawn-out melancholy cries of the Lemurs high up among the trees."

So again, in memoranda of a stay at Ambôhidratrimo, at the edge of the upper forest, in December, 1884, occurs the following:—"Here we sat down [on the margin of a forest stream], enjoying thoroughly the beauty of the woods and especially the singing of the birds. Never before had I heard in a Madagascar forest so many different notes, or so constant a sound of bird-life. Besides this there was the low undertone of water over the rapids some little distance away, and the hum of insects. It was a great enjoyment just to sit and listen, and see the birds as they frequently flew around us and over our heads. Among these were the *Soikèly*, a species of Sun-bird, a very little fellow, which sat on the topmost point of a bare upright branch; the *Railovy*, a species of Shrike or King-crow, with long forked tail; the Grey Parrot (*Bolôky*), with a long repeated whistle, as if going up the gamut; the *Vorondro* or Roller, with its prolonged whistle ending in a sudden drop; the *Parétika*, one of the Warblers, with a creaky little short note, something like a child's rattle; together with these sounds was the *kow-kow* of the *Kankàfotra* Cuckoo, the varied mellow notes of the *Tolôho* Cuckoo, the cooing sound of the *Fôny* or Wood-pigeon, and also the call of one of the Hawks (*Bemânana*)."

Any one who has stayed at Andràngalôaka or Ankêramadinika during the months of December or January, and has quietly watched for a short time among the trees in the upper forest, will not have had to complain of any scarcity of bird-life to admire and study. The beautiful and innocent creatures will come and alight all around us if we only remain perfectly still, seeking their food as they hop on the ground, or flutter from branch to branch. We may watch their nests and see the eggs, and then the young birds, noting from day to day how they develope, until one morning the nest is empty, for its little inmates have found out their power of wing, and have left to set up for themselves and add another little company to the tenants of the Madagascar forests. It may be truly said that the note of one bird or another is never silent at this time of year all day long, while some are heard also late at night.

A circumstance worth noting about the forest birds is thus described by Mr. Baron:—"The following phenomenon, which I have many times

witnessed in the forests of Madagascar, has often struck me as singular. The birds are not often seen except in flocks. A little twittering is first heard, one or two birds are seen, and then, in a few minutes, one is surrounded by a large number appearing as if by magic. The same thing has been noticed by others. But the strange thing about it is that 'birds *not* of a feather flock together.' I have seen as many as twenty or thirty birds, of six or seven different species, all travelling in the same company. Can this be for mutual defence?"\*

The people who live near the *upper* line of eastern forest say that many of the birds come up from the lower and warmer and more extensive line of forest as the summer approaches, but return as the season grows colder.

Before proceeding to notice separately each Family of this Order, another extract or two may be given from a traveller's journal, showing the variety of birds to be seen in some localities. In a pamphlet called *The Bâra Land*, by the Rev. W. Deans Cowan (L.M.S. Press, 1881), the valley of the Isahambangana is thus described:—"This valley 'is one of the finest in this part of the country. It is now here more than three or four miles wide, and with its large river and many streams flowing into it from all sides, with its strips and patches of wood, its stretches of grass and its marshes, it is a pleasant valley, pleasant to the traveller, and a paradise to the naturalist.'" "I took my way down to the shady banks of a small stream flowing east to the river. Birds were in plenty: Black Parrots; the Fork-tailed Shrike (*Railombo*) poured out its varied song of mimicry from the topmost branches; the White-browed Warbler (*Fitatrdla*) sung his sweetest, while Doves sat silent in the branches over the water. The Kingfisher sat motionless on his favourite perch, and the Sandpiper (*Fandlafasika*) was bobbing along the sand-reaches. The Oriole, the Wagtail, the Hoopoe, and a large bird like a Shrike were there; even the small Sun-bird (*Anatsôy*) darted from place to place, his bright colours sparkling in the light. In about half an hour I had picked out and obtained the specimens I wanted, among which was a small Owl, very dark brown with white spots—it was new to me (*Ninox superciliaris*)." "Just at the crossing I got another of the Coua Cuckoos (*Taitso*)." "On the way to the next village we passed a small marsh on which were numbers of Muscovy Ducks, and among the long grass in the valley the Guinea-fowl were seen in hundreds."

1.—The first bird in the arrangement of this Order is the Collared or White-necked Crow; and although he can by no means be reckoned as a song-bird, he is a very prominent member of the Avi-fauna of Imèrina—indeed of the whole of Madagascar,—and must therefore have a few words of description. This Crow—called *Goàika* by the Malagasy, probably from his harsh croak—is larger than a magpie, with glossy black plumage, but with a collar of pure white, and a square white patch on his breast, so that he has a very clerical appearance, and is not nearly so sombre and undertaker-like as his English cousin. The *Goàika* is very common everywhere, being often seen in large numbers, especially near the markets, where he picks up a living from the refuse and the scattered rice. He is a bold and rather impudent bird and will

often attack the smaller hawks. One day walking with a friend near Ambóhimanga, we came upon a large flock of crows, and wishing to obtain a specimen, my friend fired and shot one of them. For a moment there was a dead silence, but after a few seconds the whole flock set up an angry scream of rage and defiance, and, flying swiftly backwards and forwards, came so close to our faces that I feared they would strike at our eyes. Their anger and indignation at the death of their comrade, and their wish to avenge him, were unmistakably manifested in their behaviour. This Crow is occasionally kept by the Malagasy as a pet-bird; and is sometimes taught to keep the fowls away from the paddy-rice which is placed on mats to dry in the sun.

As might be expected, the Goàika is referred to in many Malagasy proverbs, two or three of which may be here quoted and translated; thus: "Like the Crow's coat: finished while it is young;" "Don't be lustrous outside (only), like a Crow;" "Many are the Crows, and one can't tell which is male and which female, for all have white necks; but whoever eats the arum (*Saonjo*), him will I punish;"\* "Do like the soldiers: get up before the Crows, awake before the Warblers" (*Filatra*). The bird is also alluded to in a native song, in the verses of which the Kite, the Brown Stork, the Lark, and the Cardinal-bird are successively mentioned; and the last verse runs as follows: "Where are you from, old fellow, you Crow there?" "I come from Antanánarivo." "How about the proclamation there?" said I. "The proclamation," said he, "is severe enough." "What was it all about?" said I. "Thieves," said he, "are to be killed!"

2.—The second Family of this Order comprises, as already noticed, a couple of birds which were formerly classed with the Ant-thrushes, but are now determined to be allied to the Paradise-birds of the Papuan Islands, and are arranged by Mr. R. B. Sharpe in a Sub-family which he calls *Philepittinæ*. These Madagascar birds are, however, much less remarkable in form than their allies in New Guinea, not possessing any of those extraordinary appendages in the shape of collars and ruffs which distinguish most of the true Birds-of-Paradise; although Mr. R. B. Sharpe does speak of them as "of very peculiar forms." But this refers probably rather to internal structure than to external appearance. The colours of *Philepitta jala* are in the adult male almost black, but in the younger birds they are black beautifully mottled with yellow. The male has a curious green caruncle stretching all round the head above the eyes. In the other species, *P. Schlegeli*, the same colours are found, but the canary-yellow tint is unmixed on the neck, breast and belly, the dark colour being confined to head, wings and tail. The native names for these birds are obscure in meaning, throwing little light upon their habits; one perhaps, *Tsôitsôy*, is imitative of their cry.

3.—The next Family of the Perching birds, that of the Orioles, contains in Madagascar six species, five of which are of genera peculiar to the island. One of these, Bernier's Oriole, is a large bird, rufous-brown in colour. Of this Oriole M. Grandidier says, "the male utters a frequent plaintive little cry and appears to be much attached to his mate. If she

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\* Several other proverbs also refer to the Crow's white neck and its eating the edible arum or *Saonjo*.

falls by a gun-shot, he descends like an arrow, placing himself near her on the ground, and it is not difficult to take him. But when the male bird is killed, the female, on the contrary, flies far away. Another Oriole, *Cyanolanius bicolor*, as its name implies, is of two strongly contrasted colours, blue above and ashy-white below; another, *Leptopterus viridis*, is blackish-green above, and pure white below; while others again are reddish-brown and white. As none of these birds frequent the central regions, their native names are mostly obscure; some appear to be imitative of their cry, as *Trèrèky* and *Tsèrèky*; while *Fôndrapôry* possibly refers to the yellow colouring of the lower part of their body.

4, 5.—The two Families of Shrikes which are represented in Madagascar have each one species. The first of these, the Fork-tailed Drongo-Shrike, is a large bird, dark bluish-green in colour, with an exceedingly long tail, forked at the extremity. It is a rather common bird, and, according to M. Grandidier, it lives in small companies, perching on dead branches, house roofs, or on cattle-folds, and dashing off frequently in pursuit of insects, with a heavy clumsy flight. This *Railôvy* or *Railômbô*, by which names it is known in the interior, is alluded to in many of the fables and folk-tales of the Malagasy as "a well-behaved bird, with a long crest, and having a variety of note" (see fable quoted *ante*, p. 84, in referring to popular notions about Owls. One of the *Railôvy*'s provincial names, *Andôvy*, seems to come from a root *dôvy*, 'an enemy,' probably from some superstition connected with it. M. Pollen gives the following, amongst other particulars, about this bird; he says: "The *Railôvy* may be seen in every part of the island which naturalists have visited. It is a very active bird and an excellent singer. Perched on a dead branch, it keeps up a constant noise, its strong voice giving forth several notes which very much resemble those of an organ. It also likes to imitate the cries of other birds, especially those of the *Tolôho* Cuckoo. In the spots frequented by a large number of these Shrikes, each one reserves to itself a hunting-ground, in which he tolerates the presence of no other birds, even of his own kind, not excepting those which are stronger than himself. When this bird has seized an insect, he returns immediately with his prey to the tree he had quitted. He is in the habit of warning, by a certain cry, all the other birds in the neighbourhood; so that when a bird-of-prey appears, he darts fiercely upon him and pursues him to a great distance. The nest of the *Railôvy* is if possible built on a branch overhanging a stream, and both the male and female birds take turns in the incubation. When the young are able to quit the nest they usually take their places in a row, on the branch of a tree, to which the parent birds come to supply them with food." Mr. Cowan speaks of finding the *Railômbô* "all over the Bâra land, even on the desolate Hôrombè."

6.—The Cuckoo Shrike (*Campophaga sp.*) is also said to be pretty common, going in companies of eight or ten, but it is less known than the *Railôvy*. One of its provincial names (*Vôrontàniaomby*) seems to imply that it is an attendant upon cattle, as are other Madagascar birds, especially the White Egret or *Vôrompôtsy*.

7.—Three Flycatchers are found in Madagascar; of one of them, the Brown-tailed species, M. Pollen says that it has a loud monotonous cry of *tuw, tuw, tuw*. M. Grandidier, however, speaks of its song as



being agreeable, resembling that of the Robin, and from it comes one of its names, *Kitikitika*.

Another species, as its name of 'Changeable' Flycatcher denotes, undergoes remarkable changes of colour according to its age and sex. The female bird is entirely of reddish-brown, except the cap and nape, which are dark green. The young male has, during the first month, the same livery as the female, but its plumage soon changes to a beautiful maroon-red; then very soon the two middle tail-feathers become enormously lengthened, the quills being black with a white fringe; the wing-coverts become partly white and partly black; and the feathers of the head change to dark-green with brilliant metallic reflections. At the breeding time the back and throat take the same tints as the head, and the belly and breast become white. This bird is found all over the island; it is always in motion, flitting from branch to branch in search of its insect food. Every time it moves it straightens its long tail and utters a peculiar little cry.

Of the third species, M. Grandidier says that its song is agreeable, resembling that of the Warblers. It hardly quits the summits of the highest trees. The native names, at least with our present knowledge, or rather, ignorance, throw no light on the habits of these Flycatchers.

We now come to the singing birds of Madagascar, those belonging to the Families of the True Thrushes (*Turdidæ*) and the Babbling Thrushes (*Timeliidæ*), with their 12 or 13 species each, of the Sub-families of Warblers, Bulbuls, Babblers, Grass-Warblers, etc.

8.—Of the White-browed (or Magpie) Warbler, M. Pollen remarks: "This songster *par excellence* bears among the Antankarana the name of *Sikitily*, but among the Sakalava that of *Todiana*. Its song is so powerful, varied and agreeable, that it might rival the best singing birds of Europe. This bird may be seen hopping lightly and briskly from branch to branch, all the time keeping a sharp look-out on what passes around. After assuring himself that no one is watching him, he perches perfectly erect on a branch and gives forth in a full volume of sound his melodious song, beating at the same time with his tail. This song much resembles that of the Nightingale, but it is more varied and shorter. The hen-bird is very rarely seen." So again, of Newton's Warbler, M. Pollen says that its song resembles that of the Nightingale, but is less varied; while of the Delicate Warbler, he notes that its whistling song is sweet and agreeable.

The native names of these singing birds do not throw much light upon their habits. Three or four species are called *Tékitéky*, probably a name imitative of their cry. One of them (*Ellisia* sp.) is called *Lavasalaka* or 'Long-loin-cloth', the reason for this odd name is probably from its long tail, the native *salaka* often being allowed to hang down behind, especially if ornamented with beads or embroidery. Another of these birds (Newton's Warbler) is known as *Voronjozoro*, 'Papyrus-bird,' and *Vorombéndrana*, a word of the same meaning, and also *Vorombàraràta*,\* 'Bamboo-bird,' names all no doubt describing its usual haunts. The word *Filatra*—possibly from a root meaning 'expanded, drawn out,' and so referring to the duration of the notes of the birds—forms wholly or in

\* The *Bàraràta* (*Phragmites communis*, Trin.) is a very tall bamboo-like grass growing in marshes and by water-courses, with sharp needle-like points to its sheathing leaves.

part the names of three or four of the Warblers. The very wide-spread name of *Jijy* applied to one of them (*Eroessa* sp.) is doubtless the same as a word meaning 'well delivered,' or 'recited,' and so is also descriptive of its song. And another name, *Firioka*, that of Crossley's Warbler, probably refers to its rapid darting flight, as it is also the name of the Madagascar Swallow, as we shall see presently.

9.—The Family which includes the Bulbuls, Babblers and Grass-Warblers appears to be less remarkable for its powers of song than the one just described. M. Pollen describes the notes of the Madagascar Bulbul (*Hypsipetes* sp.) as "short, monotonous and intermingled at every moment with the sounds *tuuc-tuuc* and *truit-truit*." Of the White-eye or Bush-creeper, he remarks that "its song is short and sweet, with a slight croak," and a cry resembling the syllables *pilu-pilu-pilu*. Mr. R. B. Sharpe thinks that there is a curious case of mimicry between one of the Bulbuls (*Tylas Eduardi*) and a Shrike (*Vanga Polleni*), and remarks that "if these are really two distinct species [as seems undoubted], we have a case almost unrivalled in interest, the Shrike assuming the plumage of the Thrush to serve him in pursuit of his prey."

As we have already seen in many other cases, some of the names of the birds belonging to this Family are evidently imitative of their notes, such as *Tikiitky* and *Tikiitkiàla*, names of the White-eyed Babbler and the Fantail Warbler. Another name, with several variations, of some of the Bulbuls, *Tsikoròvana*, possibly comes from a root *ròvana*, 'a movement *en masse*,' and so would seem to mean that these birds are seen in large numbers. One bird of this same Sub-family is called *Vòromastaka*, 'Ferocious-bird' (curiously enough, this is the one referred to above as being probably 'mimicked' by a Shrike; and so possibly the Bulbul has been credited with the rapacity of the Shrike which he resembles); another of them is called *Vòromartnina*, 'Deaf-bird,' while the word *bòka*, 'leper,' also enters into others of their names. As might have been expected, the White-eyes (*Zosterops* sp.) have several names referring to the prominent white ring round their eyes; e.g., *Tsàramàso*, 'Beautiful-eyes,' *Sipàromàso*, *Pariamàso*, and also *Ramangèrika*, from a root meaning 'to be conspicuous,' 'to be obvious to the sight.' The Fantail Warbler has, among other names, those of *Tily* and *Kitily*, 'Watchman' or 'Spy.'

Two species of Feather-tailed Warblers (*Dromæocercus*) have been found in Madagascar. These birds have curiously formed tails, composed of several long stiff quills, with a very scanty pluming of fine hair-like filaments, and cocked up at a rather high angle from the body. Like most of their congeners, these little birds are of sober brown and grey plumage.

One peculiar species of Tailor-bird has been found in Madagascar. The genus is widely spread over the whole of the Indian Peninsula.

10.—Five species of Butcher-bird (or Shrike proper) are natives of this island, and are all of peculiar genera. Of the Curved-beak species (*Vanga*) M. Pollen observes, that "it has a strong whistling cry which is heard at a long distance, but it is melancholy and heart-touching. At intervals it utters a note like *tu-tu*, which often comes from a bird just above the head and yet seems to proceed from some way off. If the sportsman will only imitate the bird's cry, he will see it, impelled by

curiosity, descend from branch to branch until it comes near enough to be shot. These Shrikes lead a solitary life, each one having his own special hunting-ground in the forest. If one of them whistles, all the others in the neighbourhood instantly respond."

It has apparently not yet been ascertained whether these Madagascar Butcher-birds have the habit followed by their relatives in other countries, of hanging up their prey of mice, small birds and insects on the thorns round their nest, from which habit indeed the genus derives its English name. M. Grandidier, however, says he was told that the male birds of the Curved-beak species sometimes eat their own young, though its usual food consists of orthopterous insects. This bird is called *Vörombéngy*, 'Goat-bird,' by the forest tribes; and another species is termed *Kibòdla*, 'Forest-quail,' and *Vörombèndra*, 'Rush-bird,' as well as other names whose meaning is obscure with our present knowledge of provincial Malagasy.

Most of these Shrikes are greenish-blue in colour, with white or grey on the breast and under parts of the body.

11.—Of the Family of Paridæ or Titmice, only one species inhabits Madagascar, the Coral-billed Nuthatch, a small tree-climbing bird, blue and brown in colour, which Mr. R. B. Sharpe terms "one of the most curious birds extant." It appears to connect the true Titmice and the Nuthatches, into which two Sub-Families the Paridæ are divided. Nothing further seems at present known of this little bird, nor does its name of *Sakòdy* throw any light on its habits or peculiarities.

12.—The last Family of the Sub-order, that of the Nectarinidæ or Sun-birds, contains three species of these beautiful little songsters, one of them, the Glittering Sickle-billed species, belonging to a genus (*Neodrepanis*) peculiar to Madagascar. It is well known that many of the birds of this Family rival, in the Old World, the gem-like and metallic tints of the Humming-birds in the New World, and this is true of the Madagascar Sun-birds. Of the *Nectarinia notata*, M. Pollen observes, "these charming birds live in flocks, and are almost always found together with the other species of *Nectarinia*, and with one of the Warblers (*Eroessa* sp.). All day long one sees them darting among the branches of the trees and about the flowering shrubs, from which they suck with their long tongue the nectar which forms their principal food. They also feed on insects and on the fruit of the banana and the mango. Their song is long, very agreeable, but little varied; now and then they utter a cry resembling that of our Sparrow. These Sun-birds have the habit of suspending themselves by their claws from the small branches, like the Titmice. During the hottest part of the day they revel in the burning rays of the sun, loving to preen their plumage, which has been wetted by the heavy morning dews which fill the calyxes of the flowers. The nest of this bird is in the form of a pocket with a lateral opening; and these are usually found hanging from the extremity of a branch of some species of mimosa. They are constructed of small roots, dry leaves and fine lianas, and are lined with spider's web. It is a curious fact that more males than females of this bird are always seen."

Of the other species of *Nectarinia*, M. Pollen says that he has seen it "particularly abundant in the plains near Anòrontsànga (N. W. Coast);

and it constantly utters its note, which resembles that of a Woodpecker. Its chief food is the nectar of the flowers of the *Acacia lebbee*.\* The male bird of this species is exquisitely coloured with metallic tints of purple, green, red and yellow. The other species is black underneath, with green and purple metallic reflections on head, neck, back and wings. The species of *Neodrepanis* is yellow underneath, with green metallic colour above. Mr. R. B. Sharpe says that "this Sun-bird is evidently the type of an entirely new genus, and is undoubtedly distinct from every Sun-bird known to me or represented in the (British) Museum." As its English and scientific names imply, its beak is very sharply curved.

In the third chapter of this paper, when speaking of the Woodpecker-like Birds (see ANNUAL XIII., p. 93), we saw that some little reference is made to the Sun-bird in Malagasy folk-tales, as having a melancholy note. The native names for these beautiful little birds almost all consist wholly or in part of the word *Sôy*, whose meaning is at present unknown; but we find *Sôikely*, 'Little-Soy,' *Sôimanga*, 'Beautiful-Soy,' *Sôiangaly*, 'Capricious-Soy,' and also *Diandiana*, possibly meaning 'Stepper.' The word *Sôy* is also reduplicated in another name, *Sôisôy*.

13.—Coming to the second Sub-order of the Passeriformes, that of the Fringilliformes or Finch-like Birds, we find only two of the nine Families of which it is composed represented in Madagascar. These are those of the Wagtails, and the Swallows, the latter of which comprises two species, a Swallow and a Sandmartin, both peculiar to this island. Of the first of these M. Pollen observes that their flight is very rapid, resembling that of the European Swallow. He also says, "I saw at Ambasôana a large flock of Swallows gathering together to set off for another part of the country. This flock formed a perfect cloud of birds; for ten minutes or so they darted backwards and forwards over the plain; they then immediately directed their course for the south-east, all uttering simultaneously the same cry."

Some of the native names for this Swallow evidently refer to its rapid flight, and contain the root *riotra*, 'rushing, passing rapidly,' as in *Kiriondànitra*, 'Sky-rusher,' and *Firiotsandro*, 'Day-rusher.' It also shares the name of *Sidintsidina*, the 'Flier,' *par excellence*, with its distant relatives the Swifts (see ANNUAL XIII., p. 94).

14.—The only other bird of this Sub-order, the Yellow-bellied Wagtail, is tolerably common along the streams in all parts of Madagascar. In its habits and appearance it seems to differ little, if at all, from the European species. It is often called *Fandiafàsika*, 'Sand-stepper,' a name it shares with a species of Sandpiper, which is also very plentiful. Its other names (*Triotrio*, *Triotriotsa*, etc.) are probably imitative of its cry.

Of the four Families of the third Sub-order of the Perching Birds, three are represented in Madagascar; and, in M. Grandidier's opinion, another Family should also be formed in this Sub-order to include a single genus and species, the *Euryceros Prevosti*, a very peculiar and interesting bird, of which more presently.

15.—The first of these Families of Starling-like Birds, that of the Weavers, or Weaver-birds, includes four species, two of which are very common and widely distributed.

\* Probably a mistake for *Albizzia Lebbee*.—R.B.

As will be seen by the Tabular List, there are three species of *Ploceus*, all called by the Malagasy *Fòdy*, either in its simple form, or compounded with some other word.\* The most common as well as prominent of these is the *Fòdy* or Cardinal-bird, which lives in companies of from six to a dozen individuals, but is often seen in very large flocks near the rice-fields and plantations, where it does much damage to the crops. "The Tanàla," or forest people, says Mr. Baron, "during the whole time of the ripening of the rice, are obliged to guard their rice-fields from the attacks of these *Fòdy* by rattles and slinging of stones" (ANNUAL V., p. 57). As the rainy and hot season approaches, which is also the breeding season with the vast majority of Malagasy birds, the male *Fòdy* changes colour from its ordinary sober coat of brown to a most brilliant scarlet, with the exception of the outer wing feathers and the tail; so that as it darts about in the sunlight it looks like a living flame. At the pairing time, i.e. in October and November, the male birds, which seem more numerous than the females, pass the time in fierce conflict for the possession of the hen-birds. M. Pollen says, "I have sometimes seen these *Fòdy* fighting with such fury that they have fallen from high above the trees to the ground, still fighting as they fell. At this time one may see the male bird perched on the highest part of a tree, uttering his monotonous cry of *spit-spit*. Immediately a hen-bird appears in the neighbourhood he puffs out his plumage, erects his tail, and beats with his wings. He then pursues the hen-bird with a rapid and direct flight until he either overtakes her, or another male bird appears on the scene. In such case a combat ensues between the two, during which the hen-bird escapes. The nest has almost the form of a pear, with a lateral opening, and is made of fine grass attached to three or four twigs of a mimosa, a tamarind, or a flamboyant tree. The eggs are from four to six in number, and are greenish-blue in colour. The parent birds feed their young for a long time after they have quitted the nest." Mr. Cory tells me: "I once caught a young *Fòdy* in a spider's web; and Mr. Gregory obtained a Kingfisher in the same way."

Being so plentiful and conspicuous, it is not to be wondered at that the *Fòdy*, at least the male bird, or *Fòdilàhimèna*, as they call it (i.e. 'Red-male-*Fòdy*'), has long attracted the attention of the Malagasy, and is frequently alluded to in their folk-tales, proverbs and children's games. Of the first of these classes of native wisdom, one or two examples have been already given in speaking of other birds (see ANNUAL XIII., p. 93); of the proverbs referring to this bird, the following may serve as specimens: "Do not forbid to eat, like a *Fòdy*," probably meaning that the bird eats so much rice that there is little left for the owner. The same voracious habit is referred to again in the saying: "It is not right to act like a *Fòdy* when the rice is ripe: tasting before the owner." Again, presuming to be equal to one's betters is reproved in another proverb, which says: "A Rice-bird (*Tsikirity*) going together with a *Fòdy*: it is not the leader, but only a follower."

This *Tsikirity* is a bird of the same Family as the *Fòdy*, but of a different genus (*Spermestes*), and much smaller. M. Pollen remarks of it: "This charming little bird goes in flocks of from twenty to forty in

\* The meaning of the word *Fòdy* I am unable to explain; probably it is one of the many names which the Malagasy brought with them from their distant Malayan fatherland.

number in the cultivated districts of the country. All day long one may see them in large numbers crossing with rapid flight the rice-fields, which they visit chiefly at the sowing time and in harvest. [They are also said to pull up the newly planted *kètsa* or rice-plants.] They feed also on all kinds of seeds, especially on that of the camomile. The whistling cry of this bird is like the syllables *spiti-spiti*, whence comes one of its provincial names. The places where the native women pound their rice are regularly visited by these birds, which feed upon the grain which falls from the rice-mortars and the winnowing fans. One may often see a score of these Tsikirity perched on a branch, and squeezed so closely together that one might take them to be glued one to the other." This little bird is much more plainly coloured than the three other Weaver-birds, its plumage being dark brown, the breast only having a warmer tint of reddish-brown. Mr. Cory remarks: "I should have said that the Tsikirity was, in colour, greenish-brown on the back, lighter on the breast, with dark, almost black, markings on the throat, and I always look upon it a pretty bird. It builds almost everywhere, like our English Sparrow, in thatch, or trees, or old nests. Have you noticed how they fly in little 'bunches,' and in perfect order? If the leader rises, all rise, etc." (My description of the colouring is taken from M. Grandidier's great work.)

Of the two other species of Fôdy, less seems to be known, since they are more strictly confined to the forest regions, as one of their names of *Fôdiàla*, or 'Forest Fôdy,' recognizes. The Sàkalàva Weaver-bird is termed *Fôdisay*, or 'Lesser Fôdy'; the male bird has a yellow head and neck, the rest of the body being brown; while the hen-bird is entirely pale brown. The Pensile Weaver-bird, as its name implies, builds a beautiful and ingeniously constructed hanging nest, shaped like an inverted chemical retort, which is suspended from the extremities of the branches of the trees, and usually over a running stream. These nests are about a foot or fourteen inches long, the bulb giving ample room for the eggs or nestlings, and the tube, forming the entrance from below, being about four inches in diameter. In the upper forest these nests are usually found singly, but in the lower forest and coast regions, M. Grandidier says that they may be seen from 30 or 40 in number, all hanging from a single tree. (Mr. Baron, however, tells me he is confident that the Weaver-birds building their nests in the numbers here described are a different species from the one in the interior, and that their nests are not retort-shaped. They are also extremely tame, and build near the villages.) The native name for this species, *Fôdifetsy*, i.e. the 'Crafty Fôdy,' recognizes this skill of the bird in thus protecting its young. Its colour is slaty-black, with yellow throat and neck; and the male bird has a black head.

16.—Two species of Starling are found in Madagascar, both belonging to genera peculiar to the island. Of the first of these (*Hartlaubia*), M. Grandidier says that it is intermediate between the Starlings, with which it is connected by its external characteristics and habits, and the Thrushes, to which the skeleton of the *Hartlaubia* shows great similarity. It is a large brown bird, with a monotonous chirp like that of a Sparrow. They often perch together on a branch so closely that half a dozen or more may be killed with one shot. Like the European Starling, they are

excellent eating, provided they are taken at the proper season. Their name of *Hôisa* throws no light on their habits; neither do their other names of *Vorontainômby*, 'Ox-dung-bird,' and *Vorontâninaomby*, 'Ox-land-bird,' add much to our knowledge of their peculiarities.

The other bird of this Family found in Madagascar also belongs to a genus peculiar to the island (*Falculia*), and is described as "a very aberrant form of Starling." It may be termed the 'Robed (or Cloaked) Starling,' from its specific name *palliata*. During Mr. Cowan's travels in the Bâra country, he says that on the banks of a small stream joining the Mânanantânana, "we were in search of the *Falculia* Starling. This bird gave us some little trouble. Sitting quietly on the branches, often high up, it kept uttering its plaintive but melodious notes, while we strained our eyes to catch a glimpse of it. Many times it happened to be sitting just before our very noses, but even then we failed to see it. This bird and the *Vanga* Shrike, both with bright plumage, are most tantalizing in this way."

17.—One species of Lark is also a native of Madagascar, and is very common on the bare downs of the interior provinces. In habits and appearance this bird is very much like the European species, but its song is less full and varied. After hovering some time it may be seen mounting up in the air to a great height, uttering its trilling notes, as if in salute to the rising sun, and then letting itself fall suddenly to the ground. Seeds and insects, especially grasshoppers, form its chief food. This Lark is not at all shy, but is difficult to obtain, as it hides in the dry grass, which it exactly resembles in colour, a greyish-brown. The eggs are laid in a slight hollow in the ground, quite exposed to observation, the protective resemblance of the hen-bird to its surroundings preserving them from danger. M. Grandidier says that this Lark is most pugnacious, and that if two male birds are enclosed in a cage they fight furiously, until the combat ends in the death of one of them.

Many native proverbs refer to the *Sorôhitra*, the Hova name for this Lark, some of which are obscure, but the following seem to refer to its peculiar flight already mentioned: "A Lark falling in the forest, because it doesn't know how to fly" (lit. "is a fool in flying"); "Thrown at, but not to be eaten, like a Lark on a grave." The unprotected state of the young birds when the hen is driven off the nest is referred to in the following: "A Lark's nestlings by the roadside: I did not cast them off, but they were forsaken by their mother." The Hova name appears to be derived from a root *rôhitra*, meaning 'to go with a rush,' or 'to go in companies.' Its Sakalava name of *Kôlokôlotany* apparently refers to its nesting on the bare ground, from *kôlokôlo*, 'cherished, cared for,' and *lâny*, 'earth, ground.' Mr. Cory says: "The Lark, I should say, was the commonest Malagasy bird, and more numerous than the Fôdy, also by no means difficult to obtain."

18.—The last bird to be noticed in this Order of Perching Birds is that already referred to, one of the most curious and interesting in the whole Avi-fauna of Madagascar from its abnormal structure and remote affinities, the *Euryceros Prevosti* or 'Prevost's Broadbill.\* The zoological affinities of this remarkable genus were for a long time a puzzle

\* I venture to give this bird an English name, translated from its scientific one,

to ornithologists, who successively placed it among or near the Toucans, the Hornbills, the Swallows, the Crows, the Starlings, and the Speckled Pies. It is, however, allied to the Starlings and the Wood-Swallows (*Artamidæ*), and is not far from the Drongo-Shrikes, but is yet so different that MM. Grandidier and A. Milne-Edwards have formed a special Family, which they name *Eurycerotidæ*, for this solitary genus and species. Mr. R. B. Sharpe classes it with the Crows, but calls it a "unique and curious form." This bird is remarkable for a beak formed like a very capacious helmet, strongly compressed and swelled towards the base, which advances to just as far as the eyes; and its very convex edge is terminated by a sharp hook, which projects beyond a large tooth-like point. This extraordinary form of the beak is seen best perhaps in the skeleton, in which the beak is seen to be considerably larger than the skull. The bird is as large as a Starling, velvety black in colour, and with a saddle-shaped patch of light-brown on the back extending to the base of the middle tail feathers. The large beak is steely-blue in colour, and is described by Mr. Crossley as pearly, like the inside of an oyster shell, but the tints fading away soon after death.

All the birds described in this chapter belong to Mr. R. B. Sharpe's first section of the *Passeriformes*, which he names *Acromyodi*, 'Singing Birds,' and comprising 26 Families. The second section of 'Songless Birds' (*Mesomyodi*), with its 10 Families, is entirely unrepresented in Madagascar.

Before concluding this chapter, I will add a few notes kindly supplied by my friend, the Rev. C. P. Cory, B.A., whose close observation of animal life in Madagascar is evident from his interesting papers contributed both to the present and to the last ANNUAL. Mr. Cory has been so good as to look over the proofs of this paper, but as some of his notes could not be included in the text, I will append them here.

With regard to the *Goaika* Crow, Mr. Cory remarks: "All over the world the Kestrel and its relatives will always 'badger' the Crow. It is the Crow who is attacked, not the Hawk; but he retaliates to the best of his clumsy ability. The nest of the Crow is placed on trees or rocks, and is defended fiercely from all enemies. The eggs are exactly similar in markings to those of the English Carrion-crow, but are rather rounder in form."

"The nest of the *Fitatra* Warbler (*Pratincola torquata*), is built of small sticks and moss, and is placed, as a rule, on some low bush. Eggs, 5-6, blue in colour. The eggs of the *Fitatràla* (*Copsychus specularis*), are similar to those of the *Fitatra*, but larger, and of a lighter blue. The Bushcreeper (*Zosterops madagascariensis*) builds a very pretty open nest on the end of some hanging branch. Its eggs are very pale blue."

"I have not myself noticed the excess of males over females among the Sun-birds; and I fancy if people only took the trouble to look, they would always find somewhere in the vicinity of the cock-bird his less gaudy mate. Does not the male lose his brilliant colours in the winter, like the *Fody*? I am not quite certain myself."

Referring to my observations in the first few paragraphs of the chapter, Mr. Cory says: "I think the want of bird-life in Madagascar is very marked when compared with England. I was very much struck with this scarcity of life in the woods on my first arrival. I have been in the



forest at all times of the year, and although your remarks are very true, and there *are* a good many birds in summer, yet if you try birds-nesting here, you will soon find out how few and far between the nests are. In England you cannot walk along a road or go into a wood without seeing hundreds [?]; here, I should think myself lucky if I saw ten. Every now and then a small flock of birds, as you describe, comes and twitters round you, but even then they are not many."

I agree with Mr. Cory in the general accuracy of his statement; all I wished to show was that there is not such a complete want of bird-life in the Madagascar woods as is sometimes affirmed. From what M. Pollen and other travellers describe, the avi-fauna of the west side of the island must be far more abundant than is that of the interior.

JAMES SIBREE, JUN. (ED.)

(*To be continued.*)



## APPENDIX TO CHAPTER IV.—TABULAR ARRANGEMENT OF MADAGASCAR BIRDS.



### ORDER III.—PASSERIFORMES: PERCHING BIRDS.

#### SECTION A.—ACROMYODI: SINGING BIRDS.

#### SUB-ORDER I.—TURDIFORMES: THRUSH-LIKE BIRDS.

##### Group I.—Coliormorphæ: Crow-like Passeres.

##### FAMILY I.—CORVIDÆ: CROWS.

##### SUB-FAMILY I.—CORVINÆ; CROWS PROPER.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
White-necked Crow	<i>Corvus SCAPULATUS</i> * (Dand.)	Goàika ( <i>Tan.</i> , <i>N. Btm.</i> , <i>An- tk.</i> )	Gàgà ( <i>Bts.</i> , <i>Ba.</i> )

##### SUB-FAMILY II.—FREGILINÆ: CHOUGHS. *None in Madagascar.*

##### FAMILY II.—PARADISIIDÆ: BIRDS-OF-PARADISE.

Paradise-bird	PHILEPITTA (Bodd.)	JALA	—————	Variamanángana ( <i>Bts.</i> ) Asity ( <i>Tan.</i> , <i>Bts.</i> ), Tsóitsóy ( <i>N.B.</i> )
Schlegel's Paradise-bird	PHILEPITTA GELII (Poll.)	SCHLE-	—————	Asaity ( <i>N.S.</i> )

\* As in the first part of this paper, in ANNUAL XIII., the names of birds in small capitals show the genera and species which are peculiar to Madagascar. The contractions after the provincial names show the tribes among whom such names are in use.

## FAMILY III.—ORIOLIIDÆ: ORIOLES.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Bernier's Oriole	<i>Oriolus</i> BERNIERI (Is. G. St. Hil.)	—	—
White-headed Oriole	ARTAMIA LEUCOCEPHALA (Gmelin)	—	Remàvo, Tséatéký (N.S.)
Anne's White-headed Oriole	ARTAMIA LEUC. var. ANNÆ (Stejneger)	—	Remàvo, Tséatéký, Trétréký (N.S.)
Two-coloured Oriole	CYANOLANIUS (or ARTAMIA) BICOLOR (L.)	—	Fondrapôry, Saràhèsa (N.S.), Raisàsatra (Btm.)
Green Straight-winged Oriole	LEPTOPTERUS CHABERT (or VIRIDIS) (Gm.)	—	Fantsàsatra (Bts., Ba., Tan.), Sèroánja, Vòrontsàsatra (N.S.), Vantsatra (Taim.)
Red Oriole	LANTZIA RUFA (Gm.)	—	Sikétriala (Btm.)

## FAMILY IV.—DICRURIDÆ: DRONGO-SHRIKES.

Forktail Drongo-Shrike	<i>Dicrurus</i> FORFICATUS (L.)	Railóvy (N.S.)	Railombo (Bts., Ba., Tan.), Railônga (Tan.), Andóvy (Ba.), Drôngo, Tsàramàso (N.B.), Raidôngo (Taim.)
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## FAMILY V.—PRIONOPIDÆ: WOOD-SHRIKES. None in Madagascar.

## Group II.—Cichlomorphæ: Thrush-like Passeres.

## FAMILY VI.—CAMPOPHAGIDÆ: CUCKOO-SHRIKES.

Ashy Cuckoo-Shrike	<i>Campophaga</i> cinerea (Mull.)	—	Vòrontàniómby (N.S.), Angavè (N.B.), Androbakè (S.E.Co.)
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## FAMILY VII.—MUSCICAPIDÆ: FLYCATCHERS.

Newton's Brown-tailed Flycatcher	NEWTONIA BRUNNEICAUDA (Newt.)	—	Trètrèmàvo (Bts.), Trétré (Tan.), Ketékètè (N.B.), Kitikitika (E.Co.)
Ward's Flycatcher	PSEUDOBAS WARDI (Sh.)	—	—
Changeable Flycatcher	<i>Terpsiphone</i> (or <i>Muscicapæ</i> ) mutata (L.)	Ramanjèrika*	Singétrà (Bts., Ba., Tan., Taim.), Tsilangètà (Tan.), Tsikètry (N.B.), Sikèty (N.S., N.B.)

## FAMILY VIII.—TURDIDÆ: TRUE THRUSHES.

## SUB-FAMILY I.—TURDINÆ: THRUSHES.

Imèrina Thrush	<i>Cossypha</i> IMERINÆ (Hartl.)	—	Olióly (Bts., Ba., Tan.)
Sharpe's Thrush	<i>Cossypha</i> SHARPEI (Gr.)	—	Vòrompótotra (N.S.)

## SUB-FAMILY II.—SYLVIINÆ: WARBLERS.

Delicate Warbler (type)	EROESSA TENELLA, <i>typica</i> (Hartl.)	—	Jijy (Bts., Ba., Tan., N.S., Taim.), Tsitsy (N.S.), Tseré (N.B.)
Larger Delicate Warbler (variety)	EROESSA TENELLA, var. MAJOR (Grand.)	—	—
Madagascar Warbler (type)	ELLISIA MADAGASCARIENSIS, <i>typica</i> (Hartl.)	Làvasalàka	Tèkitéký (N.S.), Borétiky, Parétý (N.B.)
Madagascar Fern Warbler (variety)	ELLISIA MADAGASCARIENSIS, var. FILICUM (Schleg.)	—	—

\* Another Flycatcher, *Platystiri affinis*, has been taken on the W. Coast, but M. Grandidier believes it to be only a solitary example, brought over by a hurricane from Africa, and not a true denizen of Madagascar.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Lantz's Madagascar Warbler (variety)	ELLISIA MADAGASCARIENSIS, var. LAN-TZII (Grand.)	Parètika (Ba., Tan.)	Andréta (Bts.), Andrétika (N.S.), Taméfé (N.B.), Kabànty (Antk.)
White-browed Warbler (type)	<i>Copsychus albospectularis, typica</i> (Lafr.)	Fitatràla (Bts., Ba., Tan., Taim.)	Todia (N.B.)
White-browed Magpie Warbler (variety)	<i>Copsychus albospectularis</i> , var. <i>pica</i> (Natt.)	Fitatràla (Bts., Ba., etc.)	Todiana (N.S.), Sikitily (Antk.)
Newton's Warbler	<i>Calamodyta</i> (or <i>Calamohérpe</i> ) NEWTONII (Hartl.)	Vóronjózoro	Vòrombéndrana (Bts., Tan.), Vòrombàraràta (Ba.), Tèkitèky (N.S.), Vòrongèndra (Taim.)
Crossley's Warbler	MYSTACORNIS CROSSLEYI (Sh.)	_____	Firioka (Bts.), Sòratràla (Ba., N.S.)
Collared Warbler	<i>Pratincola</i> (or <i>Saxicola</i> ) <i>torquata</i> (Poll.)	Fitatra (Bets., Ba., N.Btm., Taim.)	Fitaténona (Tan.), Tèkitèky (N.S.), Fèta (N.B.)
Yellow-browed Warbler	CROSSLEYIA XANTHOPHRYS (Sh.)	_____	Fòditàny (Tan.)

## FAMILY IX.—TIMELIIDÆ: BABBLING-THRUSHES.

SUB-FAMILY I.—TROGLODYTINÆ: WRENS. *None in Madagascar.*

## SUB-FAMILY II.—BRACHYPODINÆ: BULBULS.

Madagascar Bulbul	<i>Hypsipetes</i> MADAGASCARIENSIS (or OUROVANG) (Gm.)	Tsikoròvana, Horòvana (S. and S.E.)	Sókorèva (N.S.), Sokónina (Tandròy)
Edward's Bulbul (type)	TYLAS EDUARDI, <i>typicus</i> (Hartl.)	_____	Vòromasiaka (Bts.), Bòkamèna (Ba.), Andévororòva (Tan.), Kànkimàvo (N.S.)
Edward's (Madagascar) Bulbul (variety)	TYLAS EDUARDI, var. MADAGASCARIENSIS (Grand.)	_____	Mókazàvona (Bts.), Bòkazàvo (Ba.), Vòromarénina (Sak.)
Edward's (Belted) Bulbul (variety)	TYLAS EDUARDI, var. STROPHIATUS (Stejneger)	_____	_____

## SUB-FAMILY III.—TIMELIINÆ: BABBLERS.

Madagascar Babbling-Thrush	OXYLABES MADAGASCARIENSIS (Briss.)	_____	Fòditàny (Bts., T.), Sirontsirona (N.S.)
Ashy-crown Babbling-Thrush	OXYLABES CINERICEPS (Sh.)	_____	_____
Bernier's Babbling-Thrush	BERNIERIA MADAGASCARIENSIS (Gm.)	_____	Tràtraka (Bts., Btm.), Jobè (N.S.)
White-eyed Babbling-Thrush	BERNIERIA ZOSTEROPS (Sh.)	_____	Farifotra (Bts.), Tèkitèkiàla (N.S.), Tràtraka (N.B.)
Madagascar White-eye or Bush-creeper	<i>Zosterops</i> MADAGASCARIENSIS (L.)	Pariamàso	Sipàromàso (Bts.), Siay (Ba., T.), Sòy (N.S.), Tsàramàso, Ramanjèreky (N.B.), Mangirike (Tan.)

## SUB-FAMILY IV.—CISTICOLINÆ: GRASS-WARBLERS.

Madagascar Fantail Warbler	<i>Cisticola</i> MADAGASCARIENSIS (Hartl.)	Tsintsina	Kijòà (Bts.), Tily, Kityly (Ba.), Vinty (T.), Tèkitèky (N.S.), Kabànty (Antk.)
Brown Feather-tailed Warbler	DROMÆOCERCUS BRUNNEUS (Sh.)	_____	Sèroka (Ba.), Sèrika (Ba., T.)
Seebohm's Feather-tailed Warbler	DROMÆOCERCUS SEEBOHMI (Sh.)	_____	_____
Grandidier's Tailorbird	<i>Ortholomus</i> GRANDIDIERI (Nob.)	_____	_____

## FAMILY X.—LANIIDÆ: BUTCHER-BIRDS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Madagascar Butcher-bird	CALICALICUS (or <i>Lanius</i> ) MADAGASCARIENSIS (L.)	_____	Tôtikirosôy, Kiboàla ( <i>Bts.</i> ), Tsikatèokatéoka ( <i>T.</i> ), Titikorôsy, Filitatèma, Vèrombènda ( <i>N.S.</i> )
Curved-beaked Butcher-bird	VANGA CURVIROSTRIS (Gm.)	_____	Vànga (in all dialects), Vòrombèngy ( <i>T.</i> )
Lafresnay's Butcher-bird	XENOPIROSTRIS LAFRESNAVI (Bp.)	_____	Tsilovànga ( <i>T.</i> )
Van-Dam's Butcher-bird	XENOPIROSTRIS DAMII (Schl. and Poll.)	_____	_____
Pollen's Butcher-bird	XENOPIROSTRIS POLLENI (Schleg.)	_____	Kinkimaoro ( <i>S.E.Co.</i> )

FAMILY XI.—VIREONIDÆ: GREENLETS. *None in Madagascar.*

## FAMILY XII.—PARIDÆ: TITMICE.

Coral-billed hatch	Nut-	HYPERPHES (or HYPO-SITTA) CORALLIROSTRIS (A. Newton)	_____	Sakôdy ( <i>N.B.</i> )
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Group III.—CERTHIIMORPHÆ: CREEPERS. *None in Madagascar.*

## Group IV.—CINNYRIMORPHÆ: HONEY-EATERS.

FAMILY I.—MELIPHAGIDÆ: TRUE HONEY-EATERS. *None in Madagascar.*

## FAMILY II.—NECTARINIIDÆ: SUN-BIRDS.

Sôimànga Sun-bird	<i>Nectarinia</i> SOUIMANGA (Gm.)	Sôisôy ( <i>Ba., T.</i> ), Sôikely	Anatsôy ( <i>Bts.</i> ), Sôy ( <i>N.S., N.B., Taim.</i> ), Anjôy ( <i>T.</i> )
Noted Sun-bird	<i>Nectarinia</i> NOTATA (or ANGLADIANA (Sh.))	_____	Dandiana ( <i>Bts.</i> ), Ramanjèona ( <i>T.</i> ), Sôy ( <i>N.S.</i> ), Sôiangaly ( <i>N.B.</i> )
Glittering Sick-billed Sun-bird	NEODREPANIS CORUSCANS (Sh.)	_____	_____

## SUB-ORDER II.—FRINGILLIFORMES: FINCH-LIKE BIRDS.

## FAMILY I.—MOTACILLIDÆ: WAGTAILS.

Yellow-bellied Wagtail	<i>Motacilla</i> FLAVIVENTRIS (Verr.)	Fandiafàsika	Triotriotsa ( <i>Bts.</i> ), Triotrio ( <i>Ba., T.</i> ), Sèritsé ( <i>N.B.</i> )
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FAMILY II.—MNIOTILTIDÆ: AMERICAN WARBLERS. *None in Madagascar.*

## FAMILY III.—CÆREBIDÆ: AMERICAN CREEPERS. do. do.

## FAMILY IV.—DICEIDÆ: FLOWER-PECKERS. do. do.

## FAMILY V.—AMPELIDÆ: CHATTERERS. do. do.

## FAMILY VI.—HIRUNDIDÆ: SWALLOWS.

Madagascar Swallow	<i>Phedina</i> MADAGASCARIENSIS, or <i>Hirundo borbonica</i> (Poll.)	Kiriondànitra	Firiringa ( <i>Bts.</i> ), Firio ( <i>Ba., T.</i> ), Firiotràndro ( <i>Ba.</i> ), Fino ( <i>T.</i> ), Tsidintsidina, Manàvy ( <i>N.S.</i> ), Tibèringa ( <i>Taim.</i> )
Cowan's Sandmartin	<i>Cotyle paludicola</i> , var. COWANI (Sh.)	_____	Firiringa ( <i>Bts.</i> )

FAMILY VII.—TANAGRIDÆ: TANAGERS. *None in Madagascar.*

FAMILY VIII.—FRINGILLIDÆ: FINCHES. do. do.

FAMILY IX.—ICTERIDÆ: HANGNESTS. do. do.

SUB-ORDER III.—STURNIFORMES: STARLING-LIKE BIRDS.

FAMILY I.—PLOCEIDÆ: WEAVER-BIRDS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Sakalava Weaver-bird	<i>Ploceus</i> SAKALAVA (Hartl.)	—	Fôdisay (N.S.)
Pensile Weaver-bird	<i>Ploceus (Hyphantornis) pensilis</i> (Gm.)	Fôdifetsy	Fôdisiây (Bts., Ba., T.), Fôdisê, Fôdiâla (N.S.), Fôdisaina (Taim.)
Madagascar Cardinal-bird	<i>Ploceus</i> (or FOU DIA) MADAGASCARIENSIS (L.)	Fôdy	Fôdy or Fôdimèna in all the dialects
Dwarf Rice-bird	<i>Spermestes nana</i> (Pucher)	Tsikirity	Tsipiritika (Bts., N.S.), Sâkapia (Ba., T.), Tsiampiro (T.), Tsingoritry (N.B.)

FAMILY II.—STURNIDÆ: STARLINGS.

Madagascar Starling	HARTLAUBIA MADAGASCARIENSIS (L.)	—	Hôtsa (Bts.), Vòrontainômby (T.), Vòrontainanômby (N.S.), Bèritanômby (N.B.)
Robed Starling	FALCULIA PALLIATA (Is. Geoff. St. H.)	—	Vòronjaza (Bts., Ba., N.S.), Kazazaka (Btm.), Fitolisisiây (N.S.)

FAMILY III.—ARTAMIDÆ: WOOD-SWALLOWS. *None in Madagascar.*

FAMILY IV.—ALAUDIDÆ: LARKS.

Hova Lark	<i>Alauda</i> HOVA (Hartl.)	Sorôhitra	Vôrosôy (Ba.), Boria (Ba., T., N.B., Taim.), Kôlokôlotany (N.S.), Sirôtsy (N.B.)
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FAMILY V.—EURYCEROTIDÆ:

Prevost's Broadbill	EURYCEROS PREVOSTII (Less.)	—	Sikêtribè (N.B.)
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#### SECTION B.—MESOMYODI: SONGLESS BIRDS

Ten Families, *all unrepresented in Madagascar.*



*Madagascar a l'Isle de St. Lawrence,  
l'Amirauté, etc. Buxini:*

## EARLY NOTICES OF MADAGASCAR FROM THE OLD VOYAGERS, PART II.:

### EXTRACTS FROM KERR'S "VOYAGES AND TRAVELS."

WITH NOTES BY CAPTAIN S. PASFIELD OLIVER, LATE R.A.

Continued from ANNUAL No. XIII.

#### XI.—ACCOUNT OF AN EXPEDITION OF THE PORTUGUESE FROM INDIA TO MADAGASCAR IN 1613; BY MANUEL DE FARIA, ABOUT 1650.

BEING anxious to find out a considerable number of Portuguese who were reported to exist in the island of St. Lawrence or Madagascar, having been cast away at different times on that island, and also desirous of propagating the ever-blessed Gospel among its inhabitants, and to exclude the Hollanders from that island by establishing a friendly correspondence with the native princes, the viceroy Don Jerome de Azevedo sent thither, in 1613, a caravel from Goa, commanded by Paul Rodrigues de Costa, accompanied by two Jesuits, some interpreters, and a competent number of soldiers. This island is about 260 leagues in length and 600 in circumference,<sup>1</sup> its greatest extent being from N.N.E. to S.S.W. It is 80 leagues from east to west, where widest, but considerably less towards the north, where it ends in a point named St. Ignatius,<sup>2</sup> which is about 15 leagues from east to west. It may be considered as divided into three parts: the first or northern portion is divided from the other two by an imaginary line from east to west at Cape St. Andrew.<sup>3</sup> The other divisions are formed by a chain of mountains running nearly south from this line to Cape St. Romanus,\* otherwise Cape St. Mary, but much nearer the east than the west.

(1) Madagascar, between the latitudes of 12° 30' and 25° 45' S. and the longitudes of 44° and 51° W. (sic) from Greenwich, rather exceeds 1000 statute miles from N.N.W. to S.S.E. (sic), and is about 220 miles in mean width from east to west. This island, therefore, is (sic) a fine climate, capable of growing all the tropical productions in perfection, and excellently situated for trade, extends to about 200,000 square miles, or 128 millions of acres, yet is abandoned entirely to ignorant barbarians.—Kerr.

<sup>2</sup> The north end of Madagascar, called the point of St. Ignatius, is 70 miles from east to west, the eastern headland being Cape Natal, or de Ambro, and the western, Cape St. Sebastian.—Kerr. The map which Kerr appends is altogether in error, being evidently taken from that of De Lisle, 1722. In Flacourt's map the north promontory is marked "*Tout ce pays est Incognu*." In Thornton's chart (1700) it is marked "*Incognu*!" this is taken by Kerr, apparently, as 'Ignaco.' Don Manuel de Faria may have indicated the peninsula of Angontsy (?).—S.P.O.

<sup>3</sup> Cape *Antongil* on the east coast is probably here meant, in lat. 15° 45' S., as at this place the deep Bay of Antongil, or Manghabei, penetrates about 70 miles inland, and the opposite coast also is deeply indented by port Masoali. It is proper to mention, however, that Cape St. Andrew is on the west coast of Madagascar, in lat. 17° 12' S.—Kerr. The line from Cape St. Andrew to Cape Bellone was the line afterwards selected by the French Government to mark their limit. This line of De Faria is, of course, from Mojangâ to Ma-rantsétra.—S.P.O.

\* Cape San Romao, now Cape Rânovâtô, is nearly two degrees east of Cape St. Mary.—S.P.O.

The island is divided into a great number of kingdoms, but so confusedly and ill defined, that it were endless to enumerate them. It is very populous, the inhabitants having many cities and towns of different extent and grandeur.\* The country is fertile and well watered, and everywhere diversified with mountains, valleys, rivers, bays and ports.

The natives have no general name for the island, and are ignorant of those of *Madagascar* and *St. Lawrence*, which are given to it by strangers. The general population of the island consists of a nation called *Buques*,† who have no religion and consequently no priests or places of worship, yet all their youth are circumcised at six or seven years old, any one performing the operation. The natives are not all of one colour: some being quite black, with crisp or curled hair like negroes; others not quite so black, with lank hair; others again resembling mulattoes; while some that live in the interior are almost white, yet have hair of both kinds.

They are of large stature, strong and well made, of clear judgement, and apt to learn. Every man has as many wives as he pleases or can maintain, turning them off at pleasure, when they are sure to find other husbands, all of whom buy their wives from their fathers by way of repaying the expenses of their maintenance before marriage. Their funeral obsequies consist chiefly in feasting the guests; and their mourning in laying aside all appearance of joy, and cutting off their hair, or daubing their faces and bodies with clay.

Their government is monarchical, their kings or chiefs being called *Andias*, *Anrias*, and *Dias*, all independent of each other and almost continually engaged in war, more for the purpose of plunder than slaughter or conquest.

On the Portuguese going among them, no arms were found in their possession except a few guns they had procured from the Moors and Hollanders, which they knew not how to use, and were even fearful of handling. They have excellent amber,‡ white sandal, tortoiseshell, ebony, sweet woods of various kinds, and abundance of slaves, with plenty of cattle of all kinds, the flesh of their goats being as sweet as mutton. The island likewise produces abundance of sea-cows, sea-horses, monkeys,§ and some say tigers,|| with a great many snakes, which are not very venomous. It has no elephants, horses, apes, lions, bears, deer, foxes or hares.

The first place visited by De Costa on this voyage of discovery was a

\* There may be numerous villages, or collections of huts, in Madagascar, and some of these may possibly be extensive and populous; but there certainly never was in that island any place that merited the name of a city.—*Kerr*. Subsequently Don Manuel de Faria mentions a town of 8000 inhabitants south of Masilage, and one of 10,000 in the kingdom of Sadia.—*S.P.O.*

† “Buques.” This word puzzles me. The people of the west coast in the seventeenth century were probably *Boina* or *Bongo*. Guillaumin mentions a chief named Rabouki at Baly Bay; and Ambongo M. Guillaumin derives from Böhöbongy, *bengy*=goats.—*S.P.O.*

‡ More probably *ambergris*, thrown on their shores.—*Kerr*. Not improbably, I would add, fossilized copal gum.—*S.P.O.*

§ “Monkeys,” of course means lemurs, called the “beautiful beast” by Keeling; see *ANNUAL XIII.* p. 12.—*S.P.O.*

|| “Tigers;” perhaps meaning the only large carnivore, the *Cryptoprocta ferox*; see *ANNUAL XIII.* p. 120.—*S.P.O.*

large bay near *Masilage*,<sup>9</sup> in lat. 16° S., in which there is an island half a league in circumference, containing a town of 2000 inhabitants, most of them weavers of an excellent kind of stuff made of the palm-tree. At this place the Moors used to purchase boys, who were carried to Arabia and sold for infamous uses. The king of this place, named Samamo,<sup>10</sup> received the Portuguese in a friendly manner, and granted leave to preach the Gospel among his subjects.

Coasting about 40 leagues south from this place, they came to the mouth of a large river named *Balue* or *Bacli*,<sup>11</sup> in about 17° S., and having doubled Cape St. Andrew, they saw the river and kingdom of *Casame*,<sup>12</sup> between the latitudes of 17° and 18° S., where they found little water<sup>13</sup> and had much trouble. Here also amity was established with the king, whose name was Sampilla, a discreet old man; but hitherto they could get no intelligence of the Portuguese whom they were sent in search of. On Whitsunday, which happened that year about the middle of May, mass was said on shore, and two crosses erected, at which the king appeared so much pleased that he engaged to restore them, if they happened to fall or decay.

During the holidays they discovered an island in lat. 18° S., to which they gave the name of *Espirito Santo*,<sup>14</sup> and half a degree further they were in some danger from a sand-bank 9 leagues long.

On Trinity Sunday, still in danger from sand-banks, they anchored at the seven islands of *Cuerpo de Dios* or *Corpus Christi*<sup>15</sup>, in 19° S., near the kingdom and river of *Sadia*, to which they came on the 19th of June, finding scarcely enough of water to float the caravel.

This kingdom is extensive, and its principal city on the banks of the river has about 10,000 inhabitants. The people are black, simple and good-natured, having no trade, but have plenty of flesh, maize, tar, tortoises, sandal, ebony, and sweet woods. The name of the king was Capilate, who was an old man much respected and very honest. He received the Portuguese kindly and even sent his son to guide them along the coast.

<sup>9</sup> On this bay is a town called New Massah to distinguish it from Old Massah on the Bay of Masoali, somewhat more than half a degree farther north. Masialege, or Mesalage, is a town at the bottom of the Bay of Juan Mana de Cuna, about half a degree further south.—*Kerr*. The Maselage of Wilde (1650) was in Boina Bay, lat. 15°47', Owen's Makumba River, according to Grandidier (but I think it must be the modern Mojanga, in 15°42'). Guillaing suggests that the name 'Massaly' is a corruption from an Arab word 'Mossallay,' a place of prayer, and has no doubt of its identification in Boina Bay.—*S.P.O.*

<sup>10</sup> Samamo, or Tsamamou? Guillaing met a king of the Tsitampikis named Tsambou at Baly Bay. (Same family name, 280 years afterwards.)—*S.P.O.*

<sup>11</sup> Baly River and Baly Bay, in 16° 6' S. lat.—*S.P.O.*

<sup>12</sup> Round Cape Bârarâta (not St. Andrew) we find Kasenjy and Kinanjy in the state of Milanja, which includes Cape St. Andrew. Guillaing mentions Cagembe (Kasenjy), but his chart puts Cagembe east of Baly Bay.—*S.P.O.*

<sup>13</sup> They were then on the Bank of Prancel, which seems alluded to in the text, from the shallowness of the water; though the district named Casame is not to be found in modern maps.—*Kerr*.

<sup>14</sup> Probably the island of the Bay of St. Andrew in 17° 30' is here meant; at any rate it must be carefully distinguished from Spiritu Santo, St. Esprit, or Holy Ghost Island, one of the Comoros, in lat. 15° S.—*Kerr*. Possibly Coffin Island, or Joao da Nova?—*S.P.O.*

<sup>15</sup> Perhaps these now called Barren Isles, on the west coast, between lat. 18° 40' and 19° 12' S. The River Sadia of the text may be that now called Santano, in lat. 19° S.—*Kerr*. M. Grandidier identifies Mafaindrano, at the mouth of the Manambôlo River, in 19° 4', as the Sadia of Coronelli (1688), and of D'Anville (1749). The large "city" may possibly be Ankavandra in Ménabé (?).—*S.P.O.*



All along this coast, from Massalage to Sadia, the natives speak the same language with the Kafirs on the opposite coast of Africa; while in all the rest of the island the native language, called *Buqua*, is spoken.

Continuing towards the south, they came to the country of the *Buques*, a poor and barbarous people, feeding on the spawn of fish, who are much oppressed by the kings of the inland tribes.

Passing the river *Mane*<sup>16</sup>, that of *Saume*<sup>17</sup> in 20° 15'; *Manoputa*<sup>18</sup> in 20° 30', where they first heard of the Portuguese; *Isango* in 21°; *Terrir*<sup>19</sup> in 21° 30'; the seven islands of *Elizabeth*<sup>20</sup> in 22°; they came, on the 11th July, into the port of *St. Felix*<sup>21</sup> in 22°, where they heard again of the Portuguese of whom they were in search, from Dissamuta, the king of that part of the country.

On offering a silver chain at this place for some provisions, the natives gave it to an old woman to examine if it was genuine, and she informed the Portuguese that, at the distance of three days' journey, there was an island inhabited a long while before by a white people dressed like the Portuguese and wearing crosses hanging from their necks, who lived by rapine and easily took whatever they wanted, as they were armed with spears and guns, with which information the Portuguese were much gratified.

Continuing their voyage past the bay of *St. Bonaventura*<sup>22</sup> and the mouth of the river *Massimanga*,<sup>23</sup> they entered the bay of *Santa Clara*, where Diamassuto came to them and entered into a treaty of friendship, worshipping the cross on his knees. They were here told that white people frequented a neighbouring port, and concluded that they were Hollanders. Going onwards they found banks of sand not laid down in any chart, and entered a port in lat. 24° S. The king of this place was named Diacomena, and they here learnt that there were Portuguese on the opposite coast, who had been cast away, and now herded cattle for their subsistence. They said likewise that the Hollanders had been three times at their port and had left them four musketeers, with whose assistance they had made war upon their enemies. On some trees there were several inscriptions, among which were the following: *Christophorus Neoportus Anglus Cap.*, and on another: *Dominus Robertus Schurleius Comes, Legatus Regis Persarum*.

<sup>16</sup> It is singular that the large circular Bay of Mansitare, in lat. 19° 30' S., is not named, although probably meant by the River Mane in the text.—*Kerr*. Don Manuel was more correct in 1650 than his commentator in 1812, for there is still the great River Mané or Mania, otherwise the Tsjibòhina, but no large circular bay, which for so long was shown on the charts.—*S.P.O.*

<sup>17</sup> Now called Ranoumanthe, discharging its waters into the Bay of St. Vincent.—*Kerr*. Not so. The Saunc of Mortier (1760) is identified with the Andrānomēna River, 20° 7', by Granddier.—*S.P.O.*

<sup>18</sup> Manoputa is identified by Granddier with Mòrondáva, in 20° 17'. Sango, for Santiago, is Fangôro at the mouth of the Mangôka, in 21° 22' (Granddier).—*S.P.O.*

<sup>19</sup> Terrir is evidently Antsira, in 21° 36'.—*S.P.O.*

<sup>20</sup> "Seven islands of Elizabeth" = the Iles St. Isabel or Ratafany, in 21° 50' (Granddier).—*S.P.O.*

<sup>21</sup> Now Port St. James.—*Kerr*. Port St. Felix (of Coronelli) is identified by Granddier with the Bay of Fanémotra, in 22° 12', in Fiherēnana.—*S.P.O.*

<sup>22</sup> St. Bonaventura is apparently Ambôlisātrana; lat. 23° 3' (Granddier).—*S.P.O.*

<sup>23</sup> Massimanga, perhaps the Manómbô River. St. Clara Bay = Tullear or Tolia Bay; and the port = Port Tolia.—*S.P.O.*

In the latitude of  $25^{\circ}$  S., they entered a port which they named *St. Augustine*,<sup>24</sup> in a kingdom called Vavalinta, of which a Buque, named Diamacrinale, was king, who no sooner saw the Portuguese than he asked if these were some of the men from the other coast. This confirmed the stories they had formerly heard respecting the Portuguese; and they were here informed that the place at which they dwelt was only six days' sail from that place.

In September they got sight of Cape *Romain*<sup>25</sup> or *St. Mary*, the most southerly point of Madagascar, where they spent forty days in stormy weather; and on St. Luke's day, 18th October, they entered the port of that name in the kingdom of *Enseroe*.<sup>26</sup> The natives said that there were white people, who wore crosses, only at the distance of half a day's journey, who had a large town; and Randumana the king came on board the caravel, and sent one of his subjects with a Portuguese to shew him where these white people dwelt, but the black ran away when only half way.

Among others of the natives who came to this place, to trade with the Portuguese, was a king named Bruto Chembanga, with above 500 fighting men. His sons were almost white, with long hair, wearing gowns and breeches of cotton of several colours, with silver buttons and bracelets, and several ornaments of gold, set with pearls and coral. The territory of this king was named Maticassi, bordering on Enseroe to the west.

He said that the Portuguese were all dead, who, not far from that place, had built a town of stone houses where they worshipped the cross, on the foot or pedestal of which were unknown characters. He drew representations of all these things on the sand, and demanded a high reward for his intelligence. Some of his people wore crosses, and informed the Portuguese that there were two ships belonging to the Hollanders in Port *Lucia* or *Mangascae*. In a small island at this place there was found a square stone fort; and at the foot of it the arms of Portugal were carved on a piece of marble, with this inscription:—

REX PORTUGALENSIS (·) S.<sup>27</sup>

Many conjectures were formed to account for the signification of the circle between the two last letters of this inscription, but nothing satisfactory could be discovered. King Chembanga<sup>28</sup> requested that a

<sup>24</sup> In lat.  $23^{\circ} 30'$ , or directly under the Tropic of Capricorn, is a bay now called St. Augustine. If that in the text, the latitude is erroneous a degree and a half.—*Kerr*. The kingdom of Vavalinta is evidently Mahafaly.—*S.P.O.*

<sup>25</sup> Cape Romain is modern Cape Rânovato, in lat.  $25^{\circ} 4'$ , long.  $44^{\circ} 37'$ . Cape St. Mary is in lat.  $25^{\circ} 38'$ , long.  $42^{\circ} 45'$ . The two are distinct.—*S.P.O.*

<sup>26</sup> "Enseroe." Can this be Sivoure, or Lac Tsivory, the embouchure of which opens into the false Bay des Galions, or Lac Fanshere or Fanjery in Anôsy? In "Randumana" we seem to have a foretaste of a King Radama I.—*S.P.O.*

<sup>27</sup> This is unintelligible as it stands in the text. It may, possibly, have been a square stone pedestal for one of the crosses of discovery that used to be set up by the Portuguese navigators as marks of possession.—*Kerr*. Flacourt set up at Fort Dauphin one of these Portuguese marble pedestals in 1653, of which he gives a figure. He subscribes: "*A tergo sunt arma regis Lusitania et infra sculptum est hoc. REX PORTUGALE. N.S. 1545.*" This tablet Flacourt brought from the "Islet des Portugais," possibly this very islet of St. Clara in the Bay of St. Lucia. At the base of the stone figured by Flacourt, under the Latin inscription which he engraved in honour of Louis XIV., is a small cross in a circle—(†); so probably the circle mentioned above enclosed the sign of the cross, and this was the identical stone mentioned by De Faria.—*S.P.O.*

<sup>28</sup> The king "Chembanga" is evidently identical with the Andian Tsiamban of Flacourt, who resided at Fanshere, the "Fansaria" of the text above.—*S.P.O.*

Portuguese might be sent along with him to his residence, to treat upon some important affairs, and left his nephew as an hostage for his safe return. Accordingly, the master, Antonio Gonzales, and one of the priests, named Pedro Freyre, were sent, who at twelve leagues' distance came to his residence called *Fansaria*, a very populous and magnificent place. At first he treated them with much kindness, after which he grew cold towards them; but on making him a considerable present he became friendly, and even delivered to them his eldest son to be carried to Goa, desiring that the two Jesuits and four other Portuguese might be left as hostages, to whom he offered the island of *Santa Cruz* to live in.

These people are descended from the Moors, and call themselves *Zelimas*<sup>29</sup>; they have the alcoran, in Arabic, and have faquirs, who teach them to read and write; they are circumcised, eat no bacon, and some of them have several wives.

The king said that in the time of his father a ship of the Portuguese was cast away on the coast, from which about 100 men escaped on shore, some of whom had their wives along with them, and the rest married these and left a numerous progeny. He repeated several of their names, and even showed a book in Portuguese and Latin, which had belonged to them, and some maps; and concluded by saying that there were more Portuguese on that coast, seven days' journey to the north.

On further enquiry, a man 90 years of age was found, who had known the Portuguese that were cast away there, and could still remember a few detached words of their language.

The Portuguese set all hands to work to build a house and chapel for the two Jesuits and four Portuguese who were to remain; and when the work was finished, mass was solemnly said on shore, many of the natives coming to learn how to make the sign of the cross. One day while the king was looking on, and saw several men labouring hard to carry a cross that was meant to be set upon a rock, he went half naked and bareheaded, and carried it without assistance to the place appointed.<sup>30</sup>

The Portuguese might well say they had found another emperor Heraclius, for after this pious act of gigantic strength, he became very wicked; for being ready to sail, De Costa demanded that the king's son, who had been promised, should be sent, but he denied having ever made any such promise, and offered a slave. On this the captain sent the master and pilot with some men to enforce the demand, and a safe conduct for some Portuguese to go to Port *St. Lucia*, to see an inscription, said by the natives to be at that place. The peace was thus broken, and a party of Portuguese soldiers was sent armed against the king, who endeavoured to resist; and the king's son, a youth of eleven years of age, was brought away, the natives being unable to contend with fire-arms.

Several messages were sent, offering a high ransom for the boy, but on being told by the captain that he would lose his head, if he did not

<sup>29</sup> "Zelimas." These people are styled Zafferahimina, or Rahimina, "c'est-à-dire, la lignée de Imina, mère de Mahomet," by Flacourt.—*S.P.O.*

<sup>30</sup> This account of the native prince assisting to raise the cross is strangely parallel with the story related by the Abbé de Gonneville of what is said to have happened in 1533!—*S.P.O.*

carry him to the viceroy, they went away much grieved. This happened about the end of 1613; and, towards the middle of 1614, De Costa arrived safe at Goa with the boy, whom the viceroy caused to be instructed in Christianity by the Jesuits, and stood godfather at his baptism on St. Andrew's day, when he was named Andrew Azevedo.<sup>31</sup>

The viceroy treated him with much honour and magnificence, in hopes that when he succeeded to his father, he might encourage the propagation of the Gospel in Madagascar; and when he was supposed to be sufficiently instructed, he was sent away, accompanied by four Jesuits.

On this occasion a pink and caravel were sent to Madagascar, commanded by Pedro de Almeyda Cabral and Juan Cardoso de Pina, who sailed from Goa on the 17th September, 1616.

[On the 20th March, 1617, they discovered a most delightful island, watered with pure springs, and producing many unknown plants, besides others already known, both aromatic and medicinal. To this island, in which were two mountains which overtopped the clouds, they gave the name of *Isola del Cisne*, and on it the Jesuits planted some crosses and left inscriptions commemorative of the discovery.<sup>32</sup> The wrecks of two ships of the Hollanders were found on this island.]

On the arrival of the two Portuguese ships in the Port of St. Lucia in Madagascar, the king and queen of *Malacassi*<sup>33</sup> received their sons with the strongest demonstrations of joy, and gave back the hostages left on taking him away. The four Jesuits accompanied the young prince to his father's court at *Fansaria*, where, and at every place through which he passed, he was received with demonstrations of joy, which to the Portuguese seemed ridiculous, as no doubt those used by the Portuguese on similar occasions would have appeared to them. The king made a similar agreement with the two commanders on this voyage with that formerly made with De Costa, which was, that the fathers should inhabit the island of *Santa Cruz* and have liberty to preach the Gospel in Madagascar. Upon this the fathers went to the fort at Santa Cruz, where Don Andrew,<sup>34</sup> the king's son, sent them workmen and provisions.

The captain, Pedro de Almeyda Cabral, had orders to bring another of the king's sons to Goa and, if refused, to carry one away by force; but the king declared that he had only one other son, who was too young for the voyage, on which Almeyda satisfied himself with Andria Sambo,<sup>35</sup> the king's nephew, who was carried to Goa, and baptized by the name of Jerome. When sufficiently instructed in the Christian

<sup>31</sup> Compare Flacourt (1653) :—"Il s'appelloit Andian Ramach, duquel j'ay parlé cy-dessus, & après sa mort Andian Maroarine. Il a esté Chrestien & baptisé à Goa, puis ramené en son pays & remis entre les mains de son père, qui s'appelloit Andian Tsiamban."—*S.P.O.*

<sup>32</sup> The text gives no indication by which even to conjecture the situation of this island, unless, that being bound towards the southern part of the east coast of Madagascar, it may possibly have been either the Isle of France or that of Bourbon.—*Kerr*. There is little doubt from the context in other voyages (see note on p. 10, ANNUAL XIII.), that this *Isola del Cisne* was the Island of Rodriguez.—*S.P.O.*

<sup>33</sup> "Malacassi." This province is called Carcanossi by Flacourt.—*S.P.O.*

<sup>34</sup> Don Andrew, i.e., Andian Ramach, who, according to Flacourt (p. 33), was named Don André de Susa de Sahavedra, and kept three years at Goa.—*S.P.O.*

<sup>35</sup> Andria Sambo, or perhaps Dian Tsiamban, which was the name of his uncle, or Diar Tzanzoa, the son of Dian Ramach.—*S.P.O.*

religion, he was sent back to his country in a pink, commanded by Emmanuel de Andrada, together with two Jesuits, 100 soldiers, and presents for the king and prince worth 4000 ducats.

They set out in the beginning of February, 1618; and being under the necessity of watering at the Isola del Cisne, they found three ships sunk at the mouth of the river.

When Andrada arrived in the Port of St. Lucia, the two Jesuits came to him, both sick, declaring that it was impossible to live in that country, where all the men who had been left along with them had died. Andrada sent the letters with which he was intrusted to the king and prince by the servants of Don Jerome; and, in return, the king sent 100 fat oxen, with a great quantity of fowls and honey, and six slaves, but would not come himself; and it was found that his son had reverted to Mahometanism.<sup>36</sup>

The tribes in Madagascar, called Sandias and Fansayros,<sup>37</sup> are Mahometan Kafirs,<sup>38</sup> and are attached to the liberty, allowed by the law of Mahomet, of having a plurality of wives. The king was of the Fansayro tribe, and was now desirous to destroy Andrada and the Portuguese by treachery, incited to this change of disposition by a Chingalese slave belonging to the Jesuits, who had run away and persuaded the king that the Portuguese would deprive him of his kingdom, as they had already done many of the princes in Ceylon and India. The Kafirs came accordingly to the shore in great numbers, and began to attack the Portuguese with stones and darts, but were soon put to flight by the fire-arms, and some of them slain, whose bodies were hung upon trees as a warning to the rest, and one of their towns was burnt.

Andrada carried away with him Don Jerome, the king's nephew, and a brother of his, who was made prisoner in a skirmish with the natives, who was converted and died at Goa. All the Jesuits agreed to desist from the mission of Madagascar, and departed along with Andrada, much against his inclination; and thus ended the attempt to convert the natives of Madagascar to the Christian religion.

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REMARKS BY MR. PICKERSGILL ON SOME OF CAPT. OLIVER'S NOTES.

*Note No. 5.—Buques.*—This word certainly has no connection either with 'Bohibengui' (Ambôhibèngy), 'Bòina,' or 'Bôngo.' Probably, however, it bears some relation to *Bukini*, the Swahili, or, at any rate, the Zanzibar name for Madagascar. According to Bishop Steere's *Dictionary*, *Buki* is

<sup>36</sup> Flacourt also mentions a relation of the above, named Houlouue (Holova?), who was baptized by Père Nacquart, and named Ierosme (Jerome) by his godfather Dian Ramach, that being the name of the godfather of Dian Ramach at Goa, the former viceroy. The reversion of Dian Ramach to Mahometanism is also mentioned by Flacourt. Although the details of names are somewhat mixed, the general truth of the above narrative is well confirmed by the later testimony of Flacourt. —*S.P.O.*

<sup>37</sup> These terms are perplexing. Flacourt speaks of the *Ondeues* and *Ondzatsi*, *Voadziri*, etc.—*S.P.O.*

<sup>38</sup> In strict propriety this expression is a direct contradiction, as 'Kafir' is an Arabic word signifying *unbelievers*; but having been long employed as a generic term for the natives of the eastern coast of Africa, from the Hottentots to the Moors of Zeyla exclusively, we are obliged to employ the ordinary language.—*Kerr.*

also used. The longer form is known on the Sàkalàva coast, but only as an appellation given by Arabs and other Easterns. *Bukini* has the appearance of a Swahili locative case, *ni* being a suffix denoting *at, in, etc.*; and we may reasonably look for a derivation where the case is supposed to have been formed, for there is not the least evidence in favour of our taking the word to be of Malagasy origin.

It will be found, I believe, when search is made in the proper quarter, that *Buque* is a nickname (Swa. *buku*—a large rat) given to the people now known as Sakalava, just as the latter have dubbed the inhabitants of Imerina '*Ambdalambo*'—'pig-dogs.' There is nothing to advance against this derivation except the fact of the Malagasy who reside in Zanzibar being always spoken of as '*Makalalao*'—'cockroaches;' but to find variety in nicknames is nothing unusual.

*Note No. 9.*—"The first place visited by De Costa was a large bay near Masilage in lat. 16° S., in which there is an island half a league in circumference, containing a town of 8000 inhabitants."

Captain Oliver thinks *Masilage* must be the modern Mojangà. Guillain has no doubt of its identification in Boina Bay. But wherever Masilage was, the only island in the bay of Mojangà is that of 'Kaminandy,' which bears no traces of having been the site of a town. Moreover it has no supply of water sufficient to support one. If by Boina Bay Guillain meant that which is named on Owen's charts 'Boyanna,' he brings us no nearer the mark. There is no island at all there, neither is there in Mâhajamba, the next large bay to Mojangà on the north.

Then again, we read that "coasting about 40 leagues," from the bay near Masilage, "they came to the mouth of a large river named Balue or Baeli, in lat. 17° S." Subsequently they doubled Cape St Andrew. Now 40 leagues coasting from Mojangà would have taken them not only far beyond Baly, but to the south of Cape St. Andrew even. Besides there is no "large river" in existence at Baly. So much by way of objection to the "bay near Masilage" being identified with that of Mojangà, or with Owen's 'Boyanna,' or with Mahajamba.

Where is it then? The error in De Costa's latitude, pointed out by Kert (cf. note No. 24), directs our search to the northward, as in all probability that error was carried throughout. It appears in the quotation given above to the extent of at least a degree. 'Balue' or 'Baeli' is there stated to be in 17° S., whereas the modern Baly lies in 16° S. At St. Augustine's Bay the voyagers seem to have logged themselves in 25° S., when they were really only in 23° 30' S. Hence we may hope to find the "large bay" visited by De Costa not in lat. 16° S., but a degree, or a degree and a half, nearer the equator, that is, somewhere about 15° or 14° 30' S. And there, in fact, we have a bay which, at any rate, is not deficient in size. Nor is Narendry wanting in islands. Nosy Lânga and Nosy Fâho, if not Merintsa or Nosy Sâba, are well within its limits, and are about the size mentioned in the text.

But surely there is some mistake about that too. It is beyond the bounds of probability that 8000 natives, or any such four-figure number of them, would crowd upon an islet half a league in circumference, even if it produced an abundant supply of water. There is, however, no reason to doubt the existence of the large town, for Narendry also contains the island called Nosy Lâva, which appears to have been at one time the residence of the Sakalava king of the district. The present chieftain keeps his state in Antônibè, at the head of Narendry, but the island is honoured by Sakalava ceremonies as the burial-place of his predecessors, and his customs are collected there by a half-caste Arab. There are two or three villages on the island; weaving of rofia cloth is carried on there, as it is amongst the Sakalava almost everywhere, and the little harbour is a favourite place of call for Indian, Arabian and East African dhows. It is true that Nosy Lava is more than half a

league in circumference, but it is exactly that distance *across*. Taking this to be the island and Narendry the bay referred to as having been visited by the Portuguese commander, and coasting about 40 leagues to the south, as he did, we come to the mouth of "a large river." There is no doubt about it. Names may have been mixed up, either by the person whose chart was De Costa's guide, or by the voyager himself, or by his chronicler, De Faria, but the River Betsiboka is the only one north of Cape St. Andrew which would announce itself unmistakeably.

That there was no town named Masilage at the mouth of the Betsiboka becomes almost a matter of certainty when we remember that Mojangà was founded later than the year 1613, by a colony of half-caste Arabs, upon a site which evidently had not been previously occupied, seeing that they gave it a name in their own language.

Where then was Masilage? Answer, near Narendry. Grandidier identifies Old Masilage with Mahajamba.

*Note No. 13. Simamo*: doubtless Tsimamo= 'not drunk,' or 'not given to 'drink,' 'the teetotal one.' A likely name for a Sakalava king under Mahommedan influence.

W. C. PICKERSGILL.



X

## NOTES ON THE HABITS OF SOME OF THE SOLITARY WASPS OF MADAGASCAR.

IN this paper I do not propose to treat the subject scientifically, and to worry my readers by stating the number of joints in the palpi, or the peculiar formation of the other organs of the mouth, the venation of the wings, position of the ocelli, and such matters; but I merely intend to lay before them the habits of the most common species from notes I have made by direct observation.

Few people who have lived in Madagascar can have failed to have heard the shrill hum of the common *fangàrika* (see fig. I.), as they took their "forty winks" under the cool shade of their verandah. To me it will always be one of those noises which recall places so vividly after many years of absence. As one lies back comfortably in the long-armed Malagasy chair, and has just reached the stage of not quite knowing if one's cigar is alight or no, and one's book has contracted the uncomfortable habit of dropping on the ground, a low buzz, followed by a very shrill one somewhere up in the rafters above, causes one to lazily open one's eyes and look up. Busy at work is a black wasp about an inch long, with russet wings. You have barely time to discover her position before

she is off again, and drowsiness once more overtakes you; when the *bizz* again attracts your attention, and this time, knowing where to look, you see her spread her load of clay; and if you happen to be a lover of nature even in its lower forms, you alter your position so as to see what is going on in that wonderful insect world of which we know so little. As we sit there and await her return, we can follow her in our mind's eye to the banks of the little stream where she has her brick-field.

Alighting near the spot, she runs to it and immediately begins kneading the red earth with her mandibles; quickly it takes the form of a shining pellet of clay about the size of a pea, which she dextrously picks up between her prolegs and mandibles, and flies away back to the verandah. It had taken her some time and trouble before she chose this place. First of all, it had to be under shelter, then the surface had to be of sufficient roughness to hold the clay foundations firmly, and it must be also of sufficient area. All this had to be discovered by a thorough investigation, and could only be ascertained by passing her antennæ over each portion at least six times; in fact, it took her a considerably longer time to find a suitable spot than it will do for her to finish that cell up there. The spot, however, she *has* found, and she has already laid the foundation by spreading a thin layer of clay smoothly over the surface.

Let us watch and see what she is doing now. Settling on the exact spot she chose last time, about an inch below her work, she runs quickly up to the top and turns her head downwards; then seizing the ball of damp clay, she lays it with one sweep backwards in a rough raised projection, like a little wall, on the left-hand side of the lowest part of the foundation. This is smoothed down, beginning at the top, more trouble being taken with the inside than with the outside. Next time she alights on exactly the same place as before—a rule she never breaks till the cell is finished—and makes another little wall in the same way, but on the right-hand side. On returning she lays it on the left, then on the right, and so on, but she always takes care to make each course slightly overlap the last, thus making each layer 'bond in' with the others, as a mason would do. (See fig. IV.) By working alternately she leaves each side the time taken for two journeys to dry, that is, about two and a half minutes.

But now she is nearing the top, where the cell narrows off, and one load is sufficient to complete an entire course, as the dimensions are necessarily much diminished, and one begins to wonder how she will manage about the drying; but if you refer to your watch you will notice that she now takes just twice as long as before over her journeys there and back, and thus solves



er difficulty. About twenty-six journeys will finish one cell, and on a fine day it will take her about forty-five minutes to complete it. The cell is now like a large hollow acorn placed at a slight angle with the horizon, which angle differs considerably in a number of cells.

But now comes the stocking of it with spiders, previously stung by the wasp, and thereby paralyzed, but not killed; after which she lays an egg among the spiders and covers in the cell. One can hardly realize a more horrible death than these stretched insects would experience, if they were possessed of higher faculties: incarcerated in a dark cell, paralyzed so as to be completely powerless, but not insensible, and slowly eaten by a horrible grub!

These spiders are very small and numerous. I once took the trouble to count and weigh the contents of several cells, and the following are the results. The second grub I have occasionally mentioned is the larva of a smaller species of wasp that gets into the newly finished cells and deposits its egg. This larva, though much the smaller of the two, eventually eats its larger neighbour, as well as the rest of his food; but of this horrible tragedy the originator of the cells is fortunately ignorant.

No. of cell	No. of spiders	Size and No. of grubs	Weight of spiders and grub
1	14	1 small	5.5 grains
2	19	1 newly hatched	5.8 "
3	16	2 small	5 "
4	15	1 grub 1 day old	5 "
5	11	1 egg, 1 grub 1 day old	5 "
6	10	2 eggs	4.5 "
7	8	1 grub 2 days old	3.5 "
8	14	1 grub 5 days old	.5 "
9	10	1 grub 7 days old	4.8 "
10	9	1 grub 6 days old	4.8 "
11	13	1 grub 4 days old	.5 "

The fewest spiders I have ever found were two, but the size made up for the paucity.

I also forgot to mention that the cells are placed sometimes in order, one above the other, sometimes without any such order, but just as seemed convenient to the builder, and at all angles; but the whole, after being stocked and the mouths closed, are strengthened by having small buttresses run in all directions over them, and are then daubed over with clay till the original shape of the cells are lost, and they have the appearance of an irregular lump of clay stuck on to the wall. The larva spins a thin, transparent, brown silken tissue when it goes into the pupa form, and does not, I believe, change the imago until the following spring, or at least for some months.

I now wish to call attention to a much larger wasp and one of very peculiar formation (fig. II.). In the abdomen is what is sometimes called a 'knot,' a formation often seen in the ant. It is a kind of hinged joint at the end of the first segment—all female wasps have six segments in the abdomen, and the males have seven—the other five segments taper to a sharp point and are both exceedingly elastic and capable of expansion. Their telescopic property, if I may use the word, is well illustrated by taking a match-stick and placing its point gently on the thorax of the insect, sufficiently hard, however, to prevent its moving; it will then curl its abdomen nearly twice round the stick, and sting you in the tip of your finger. The normal length of the wasp is about two inches. The mandibles (or jaws) too are elongated into a sort of proboscis curved slightly inwards, and are admirably adapted to their work of digging and kneading clay, of carrying the clay when prepared, and of grasping its prey. Unlike the last mentioned wasp, this one does not fetch the clay for building purposes from the banks of a stream, but carries the water to the dry earth, which it then damps and kneads into balls. When thus occupied, it makes two journeys in quick succession, and then takes a longer time; then two more quickly; then again an interval. There are two reasons, I think, for this: one, in order that the clay may have time to harden, and the other, in order to replenish the water supply. The pellets of clay are carried in the same way as by the other wasp, namely, between the prolegs and mandibles.

The nests, which are extremely hard, are very like half-buried native waterpots (*sinibè*), with the mouths facing the observer, and are arranged regularly one above the other. When finished and stocked they are plastered over with rough gravel, so that they never appear so red as the nest of the other mason-wasp, but are of a greyish-brown tint.

Now we pass on to the stocking of the cell. In hunting, this wasp behaves in much the same way as the sparrow-hawk. She flies low, beating every bush and flower, hovering for a short time over each, but with just the same dash, until she sees her prey, and then she stoops; but, unlike the hawk, she alights a few inches from her victim and, following it up on foot, seizes it—a fine fat caterpillar—near the head, and, without leaving her hold, twists its body right round and stings it near the thorax, hence the reason of the 'knot.' But now that she has secured her prey, she has first to find out whether it is fit food for her progeny, before she takes the trouble to bear it away to the cell; for she is perfectly well aware that even a healthy-looking caterpillar may be impregnated with the eggs of the tiny ichneumon-fly, and therefore of course useless for stocking

purposes, if not absolutely dangerous. In order to ascertain this, she turns it over and over, and carefully feels it from end to end, pinching it gently between her mandibles, and, if tainted, throws it away in disgust. When I first witnessed this, I was surprised that the mandibles were used, and not the antennæ, which are the customary organs of touch among the insects; but after a little reflection I came to the conclusion that, as the eggs are deposited below the surface of the skin in the thick layer of fat which surrounds the caterpillar, their presence could not have been detected without some pressure.

If, on the other hand, nothing is discovered, the unhappy victim is borne away, slung beneath the captor, grasped in its prolegs and mandibles. There are very few wasps strong enough thus to support a caterpillar during flight, and most of those which prey upon them resort to running after they have raised their burden. On arriving at the cell it requires considerable dexterity, if not ingenuity, to place the caterpillar in it. To do this the wasp grasps the lips of the opening, her head being on a level with it, and then slowly thrusts the head of the caterpillar in; after which she eases it on with her prolegs, until it drops of its own weight within the cell. There are usually three caterpillars placed in each cell, and the third of course is much more difficult to get in, but it is managed in the same way.

The grub of this wasp spins a thin silken cocoon of brown tissue when about to change into the pupa state, like the last named, but it also lines the entire cell with thin white silk. I ought to have mentioned that the caterpillars are always of the smooth kind, and are usually about an inch in length, or a trifle longer.

The next wasp (fig. III.) is one of the fossorial or burrowing wasps, of which there are a great many kinds in Madagascar, varying very much both in size and formation, though but little in habits. Some use caterpillars for stocking their burrows, some large spiders, and some crickets, but all drag or carry their prey on foot, even the largest of them. Those that fetch spiders almost invariably drag them by running backwards, and I have noticed that such wasps possess longer antennæ than those which carry, probably so as still to be able to use them as feelers in their retrogression, by turning them over their backs. Also, since the large spiders are very unwieldy things to carry, on account of their legs, long antennæ are necessary in order to reach beyond them. There is one small wasp that is wiser in this respect than her larger neighbours, for she carefully amputates all the spider's legs close up to its body, and then slings the trunk beneath her in the same way as those which hunt caterpillars. The perfect balance which the latter

contrive to maintain when carrying the caterpillars is marvellous, as well as the pace at which they go. The posterior and middle pairs of legs are long, so as to enable them to stride above their burden, whereas the anterior pair is, as a rule, much shorter, being used principally for grasping, yet they must be sufficiently stout to dig the burrows. In digging these they use their tibia, not their tarsi—that is their elbows, not their hands—the tarsi being doubled up inwards and so act as a brush to sweep out the loosened mould. Should any small stone obstruct the way, it is removed by means of the mandibles. The burrows, as a rule, are very deep, that is, in comparison with the size of the insect, frequently being a foot or more in depth. As a rule, they are nearly perpendicular, but the entrance, for about two or three inches, is at an angle of about  $30^{\circ}$  with the horizon. When covering it in, the latter portion only is filled, the perpendicular part being left hollow.

The hunting of these wasps, however, is by far the most interesting of their habits, and it would be quite worth anyone's while to watch a hunting raid of the large wasp (fig. IV.), if they can get the chance. She will first be seen to beat about the bush very slowly and carefully, backwards and forwards, over and under it, settling every now and then, and running a short distance up a branch, only to leave it again and begin on the other side. It is soon quite evident that she is not hunting by sight, for even our inferior human eyes can quite well see the hunted spider crouching under the leaf just below her. Round and round she flies just above it, coming nearer and nearer, and at last settles quite close. Her pace is now fast, and she rushes hither and thither, as if knowing her prey is near. She sees it and makes a rush, but the spider is too quick, and drops down below on its silken rope. Wildly the wasp rushes over the leaf it has first left, as if surprised and at fault, but soon she hits the scent once more. That silken thread is left to tell its tale, and round and round it he wheels as he drops lower and lower at each revolution. Again the spider sees her and drops down further, still remaining suspended, however; but it is all of no avail, the dread enemy—more dreadful perhaps, because it comes in the form of an avenger of all the insects eaten—is an insect itself. She is close upon him again, and he drops to the ground, and severing the fatal thread seeks refuge beneath the decaying leaves that lie thick below the bush. The wasp too is now on the ground at the very spot where the spider dropped. She makes a cast to take up the scent and hits it off. Away she runs on the track with scarce a pause, and now the spider turns to bay, for further attempts at concealment are evidently useless. It looks as if it might well be a drawn battle, so evenly matched appear the combatants, as they stand facing each

other. Both look of equal weight, and the powerful jaws of the one, ready open and prepared with poison, are no mean weapon, even when compared to the death-giving sting of the other. There they stand, one on the defensive, the other not daring to attack. The wasp now makes a feint, and the spider rushes at her and snaps his jaws, but retreats in time. Another and another feint, without result, when suddenly she seizes him by the top of the head, and in a second the fatal sting has pierced just where the body joins the thorax. But the effects are not instantaneous, and she quickly retreats to a safer distance from those awful teeth that gnash upon her with blind fury. She knows full well that the battle is won, and keeps away to watch the progress of the poison. Gradually a tremor passes over the spider's frame, and he sinks down a helpless mass. Then the wasp approaches carefully, and tries if he is paralyzed, but even after ascertaining the fact, she waits a short time longer; then, seizing him once more by the head, she drags him backwards to the hole, and disappearing first herself, pulls him slowly down into his living grave. At first sight it looks as if the wasp would never be able to get out again, as the spider fits like a cork, and the wasp of course is below it; but at the bottom of the burrow is a cavity large enough for her to pass, and for the development of the grub.

I have spoken of three of the more common solitary wasps, but there are very many more kinds that are quite as interesting in their habits as the above, as also are the solitary bees; but space prevents me from giving more than a very cursory description of a few of these.

There is one very small wasp that saves itself much labour by choosing a long hole in a piece of wood, or a small bamb etc., for the rearing of its larvæ. This it divides off into equal lengths by small clay partitions, each being stocked with spiders. Others are still more chary of their labour, and merely eat their way into the nests of others—always at the side, wherever the original mouth may have been—and there deposit their egg, the grub being parasitic on the original possessor, and also finishing off the rest of the stored food. These parasitic wasps are always smaller than those on which they feed, and I have sometimes thought that they merely eat up the provisions in the cell, thereby starving the original grub to death, for I have occasionally emptied a cell and watched the feeding of the two grubs; and as far as I have been able to notice, they have continued to live amicably together, each eating their own spiders. Of course the smaller grub, though equally voracious, needs but half the amount of food necessary for the larger. I have also tried the effect of inserting double the amount of food usually given to one grub into a cell, but

have not seen it make any appreciable difference in the size or strength of the larva; whereas the unnatural surroundings—for I had to place them in a larger cell—seemed to prevent the transformation into the pupa form, though some few of them changed partially.

Each kind of wasp seems to have its own peculiar way of hunting. Some creep cautiously after their prey; some run it down on foot by scent for long distances; some dash violently into the web of a spider and catch him as he drops from out of it; while others again seize their prey upon the wing, especially the social wasps.

The males of all are lazy and do no work, but are usually seen running up and down, picking up the honey-dew on the leaves of the shrubs, or inducing the aphidæ to eject their sweets.

Perhaps it will not be out of place to mention here that the social wasps of Madagascar are not well represented, the species being few, and the individuals not numerous. I have seldom seen a colony with more than ten to fifteen representatives.

I have often found colonies of the solitary wasps, always of the parasitic kinds (when I say "colonies," I mean congregations). Every evening, for about three months, some fifty to sixty wasps were in the habit of congregating below the thatch of an out-house belonging to me. They used to settle on one of the loosened reeds from the thatch that hung down below the rest, and were accustomed to arrive at about 3.30 p.m., and to disperse again at 10 a.m., the males being in slight excess over the females. I have also seen similar 'roosting places' of a species of solitary parasitic bee. Can this have been the beginning of the social orders of the Hymenoptera?

C. P. CORY.

*Explanatory Notes on Plate.*

Fig. I.—The *Fangàrika*. Head broader than thorax; eyes glabrous, ocelli,\* and very close together; antennæ long with short scape; mandibles powerful, not hooked; tongue very short; labial palpi, 4 segments, the first longest; maxillæ short and clubbed at apex, their palpi 6-jointed, the 4th, 5th and 6th joints being longer than the 1st, 2nd and 3rd. Sting long and unbarbed.

Fig. II.—The *Fangàribè*.

Fig. III.—Another *Fangàribè*. Head oblong, hairy; eyes small, ocelli,\* very close together; sting long, curved and unbarbed; labrum large, broad and slightly hairy; mandibles strong, powerful, with one tooth thinly haired; maxillæ short and blunt; palpi 6-jointed, 1st shortest, the 2nd=3rd, and the 4th, 5th and 6th equal each to one half of the 3rd; labial palpi 4-jointed, the 1st=2nd=twice 3rd and 4th; tongue short.

Fig. IV.—(a) Finished cell of *Fangàrika*; (b) unfinished cell; nos. 1, 2, 3, 4, 5, etc., show progress of work.

Fig. V.—Cell of *Fangàrika*, showing it fixed and completed.

THE ORATORY, SONGS, LEGENDS, AND FOLK-  
TALES OF THE MALAGASY, PART II.

(Continued from ANNUAL NO. XIII.)

## CHAPTER I.—ORATORY AND FIGURES OF SPEECH, CONCLUDED.

THE sixth section of Mr. Dahle's *Specimens of Malagasy Folk-lore* consists of a short series of seven speeches, under the heading of *Haingom-pitenenan' ny Ntaolo, raha nifanànatra izy*, that is, "Ornaments of Speech among the Ancients, when they admonished one another." Although in Mr. Dahle's selection these follow the native songs, they would seem to be more properly placed next to the first division of the book, *Hain-teny làvalava*, or "Oratorical Flourishes," as they partake somewhat of the character of these latter; and we shall therefore consider them in this place. There is some little difference in the style of these pieces, and in that of the *Hain-teny lavalava*; and as they afford good illustrations of some features in native oratory and its profusion of figures, two or three of them may be translated in full, although some of the allusions are rather obscure.

*A Plea for Friendship.\**

1. As regards ourselves and not other people: for we are people born of one mother and people of one origin; one root, one stock, brethren like the hoofs of the cattle, not broken, although cloven; a hundred measures of rice mixed in the storehouse; houses built north and south of each other; † right and left hand; eyes and nose; rice in two measures, yet born of one person only.

2. Therefore let us love one another, for those far off cannot be called; for the distant fire, as they say, one cannot warm at; and a hundred measures of rice cannot be carried (by one).

3. There is none overtaken by another [that is, helped by strangers]; for if we call for other people's relatives, they say, it is night, but if we call our own relatives, then it is broad day; ‡ for look, even the name of Such-an-one is become 'Not-overtaken-by-another' (or, 'Not indebted-to-strangers').

4. Therefore as for thee, O senior like to a father, thou art an *Ambòra§* tree for holding fast, and the thick forest for hiding, and the hoof for standing firm, and the sun and moon, and the sky to cover over, and the earth for treading upon.

5. Thou art the breast cleaving to the wings, and the palm of the hand joining to the forefinger, and the knee joining the sinews.

6. Thou art the sole *Viamaintilàny||* seed remaining, and the tree, sapling of the forest, and the bird substitute for meat, and thou art Chief of the place and Such-an-one still living (amongst us).

\* On the ground of relationship; lit. "a plaiting of friendship."

† The old Hova houses were always built with their length running north and south, the front of the house facing the west, the lee-side.

‡ Referring to the strong and universally admitted claims for help in various circumstances that relationship involves.

§ A species of *Tambourissa*, producing very durable wood used for the houses of the sovereign and nobles.

|| A shrub with small bright scarlet seeds with a black spot on one end; *Abrus precatorius*, L.

*Thanksgiving Speech.*

Pleasing, friends; acceptable (lit. swallowed), friends; sweet, friends; great and cannot be swallowed are ye. Sweet indeed is honey, but there are dregs; savoury (lit. sweet) indeed is salt, but it is like a stone; sweet indeed is the sugar-cane, but it is like wood; but the good done by you is incomparable. Nevertheless, friends, be of good cheer, for the good you have done will not be pleasing (only) on the day of doing it, like the feet of the cattle treading the rice-ground, but will be pleasing when taken home to sleep on, for it shall be rewarded when awaking; for that is water bathed in to remove grease, and fat anointed with to make sleek, and cloth to wear to keep off shame. For money is soon spent, and other things come to an end, but friendship, *that* is enduring.

Another speech is an admonition to companions who shirk their share of government (unpaid) service (*fānompòana*):—

Short is our word, Sirs, a speech of the old, and if long, yet height without bulk, and if too short, then rolled about; so let it be like the trench for sweet potatoes made by Ikarjavòla, and the germs (fig. for topic) extracted.

With regard to yourself, Such-an-one; the people (lit. "the under the day") go upon the Queen's service, but thou hidest away in secret, and dost not go to do thy share, but only just now puttest in an appearance. So that here now thou actest like the little butterfly by the water: able to close up its wings, able to expand them; thou dost like the water-beetle: black when diving, black when emerging; for if thou art like the little crab in the hole: grasped by the hand and yet not got, sprinkled with water and not coming out, then we detest that, Sir! And now if it appears that what is under the eye is not seen, or under the tongue and is not chewed, or near the nose and is not smelt, or looked at and is not known,—then we utterly detest that, Sir! So, although your feet even may go, and although your knees even may skulk along, and although your chin may touch the ground, we will not let you off unless you perform the service for the honour of the Sovereign.

Here is another piece, the subject of which is,

*Do not use Evil Speech.*

1. It is not well that men should make a hammer with two heads: both speaking good and speaking evil. For it is an evil thing, friends, to act like the tongue of the ox: licking carefully the hump and licking also the feet; able to enter into the nostrils, able to enter also the mouth.

2. Take heed to the mouth, friends, for the mouth is a compartment (or room); the mouth is just like a piece of cloth, tearing this way and tearing that way; the mouth is like Alakaosy (the unlucky month), and if one does not butt another, one butts one's self (fig. for bringing ill-luck). For the good (speaking) mouth is, they say, as a meal; but the evil mouth is, they say, a thing cleaving to one.

3. The evil mouth is just like the loin-cloth, binding only its owner. For there is no one guilty in body, they say, but they who are guilty in mouth are really guilty. For the unguarded mouth, they say, is a cause of calamity, and those who are free of speech, they say, reveal secrets; so that what is done by the mouth, they say, endangers the neck.

4. Take heed, friends, to the mouth and do what is right, for that only brings lasting good. For if one does good when young, they say, they have something to take to old age, yea, even to take with them unto death. For that has given rise to the popular saying, "Do good that you be not forgotten, even when you have mouldered away." For the good done, they say, is a memorial (lit. "a set-up stone"), and the good done is food packed up for a journey.

It will be noticed in this speech what a frequent repetition there is



of the word *hono*, "they say," or, "it is said," apparently guarding a speaker from personal responsibility for much of his counsel, and sheltering him under the authority of others. This is quite characteristic of the native mind, which shrinks from very direct assertion or accusation, and always prefers an indirect mode of statement.

The symbols and figures which the preceding pages show to be a marked characteristic of Malagasy speech are not, however, confined to words, but are sometimes extended to actions. Every reader of the Old Testament Scriptures is aware of the frequent use made of such methods of teaching by the Hebrew prophets, as seen in the Book of Ezekiel (iii. 1-3; iv. ; vii. 23; xxiv. 1-4; xxxvii. 15-17), and in 1 Kings xxii. 11, etc.

In Malagasy history there are some interesting examples of a similar employment of symbolic acts, especially before the general use of writing had made written letters common. Towards the close of the last century, Andrianampôina, King of Imérina, had reduced under his authority a great part of the interior of the island, and, confident in his own power, sent a messenger to the principal chief of the southern central province, Betsilèò, telling him that he was "his son" (a common Malagasy expression implying that one person is subordinate to another), and requiring him to come and acknowledge his father. The Betsileo chief, however, replied that he was no son of the Hova king, but that they were brothers, each possessing his own territory. The Hova returned for answer, "I have a large cloth (to cover me), but thou hast a small one; so that if you are far from me, you are cold; for I am the island to which all the little ones resort, therefore come to me, thy father, for thou art my son."

When the Betsileo chief received this message, he measured a stick being the between his extended arms (the *rify*, or standard measure of the Malagasy, length from the tips of the fingers of one hand to those of the other when the arms are stretched apart to the utmost), and sent it to the King, with the words, "This stick is my measure; bid Andrianampôinimèrina equal it; if he can span it, then I am his son, and not his brother." Upon Andrianampôina trying it, he was unable to reach it, for the Betsileo chief was long in the arms. But the Hova king replied, "The stick is of no consequence, for kingship does not consist in length of arms; thou art little, therefore my son; I am great, therefore thy father." (Cf. 2 Kings xvi. 7).

Still the southern chief was unwilling to submit, and sent a particular kind of native cloth ornamented with beads, with a request that an ox should be cut up upon it, as another sign whether he was to acknowledge the Hova king as his superior or not. This test also turned out to his own advantage; but at length Andrianampôina would have no further trifling. He sent back the cloth with a piece cut off one end of it, and a spear-hole through the middle, as a significant warning of his intentions unless immediate submission was made. The lesson was not lost upon the weaker chief; he returned a humble answer, begging that he might not be killed, saying, "While it is to-day, all day let me eat of the tender (produce) of the earth, for Andrianampôina is lord of the kingdom."

Something of a similar kind of symbolic act is related of Queen Rànavàlona I. "When she came to the throne in 1828 there was a little boy not many months old at that time, named Rambôasalàma, of the true

seed royal, and descended from the line of the ancient kings. The Queen then announced that she had made this boy her adopted son, and that he should be her successor; even if she should have children of her own, his right to the throne should remain good. Afterwards she had a son of her own, whom she named Rakoton-dRadama; many thought that her own son would succeed her, but the declaration in favour of the other was never rescinded, and hence arose much animosity between the two princes. When the Queen became old and feeble, the subject of the succession came up, and she settled it in a singular way, substantially as follows:—She held a meeting of her officers, judges, and heads of the people, with great solemnity within the palace, when she announced her intention of making a valuable present to each of the two princes. Two fine vases or covered vessels were placed on the table, and the two young men were called in; the elder was first directed to choose which he would have. He did so, and on opening the vase it was found to contain some beautiful gems and valuable ornaments. The younger, her own son, then opened his vase, and found it contained only a handful of earth. The Queen then addressed the assembly, saying that the elder prince was to be advanced to high honour and riches in the kingdom; but, as the land could not be divided, the younger prince, who had received from God the handful of earth, should be her successor.\* He eventually became King under the title of Radama II., but only reigned about eighteen months.

#### CHAPTER II.—RIDDLES AND CONUNDRUMS.

The second division of Mr. Dahle's book consists of about three hundred Malagasy Proverbs, here called "Shorter clever Speeches resembling Proverbs;" but, as this branch of native wisdom and observation really requires a series of papers in order to do it justice, we shall not here give extracts from this part of the book; but would refer the reader to the papers on Malagasy Proverbs already published in the ANNUAL by Rev. J. A. Houlder (V. p. 58; VIII. p. 86) and by Mr. Clemes (IV. p. 26), and especially to Mr. Houlder's book on the subject about to be published by the English Folk-lore Society. Besides which, it would be necessary to take illustrations from larger collections than this supplementary one from the work we are chiefly using as a text-book.

The third and fourth sections of the book comprise a small collection of Malagasy Riddles and Conundrums, *Fampanononana* and *Safidy*, the latter meaning 'choosings,' two somewhat similar things being offered for choice in enigmatical language. Such playing upon words is a favourite amusement of the people; and, as some of them show considerable shrewdness, a few examples may be given, all of them beginning with the question, "*Inona azy izany?*" "What then is this?"†

1.—At night they come without being fetched, and by day they are lost without being stolen? *The stars*; for, according to the common belief, they go completely away from their places by day.

\* Quoted from *Recollections of Missionary Life in Madagascar*, by James Cameron, Esq.

† In ANNUAL II. p. 126, Mr. Richardson gave 20 examples and translations of Malagasy Conundrums; so we give here another dozen or so of this class of native composition.

- 2.—Cut down, and yet not withering? *Hair*, when cut off.
- 3.—Six legs and two feet (lit. 'soles')? *Money scales*, which have always three strings (legs) for each pan, which is called in native idiom its 'tongue,' but in the riddle is compared to a foot.
- 4.—Lying on the same pillow, but not on the same bed? *The rafters of a roof*, which lean on the same ridge-piece (or pillow), but rest (that is, the opposite sides) on different wall-plates (or beds).
- 5.—Coarse *rofia* cloth outside and white inside? *The manioc root*, which has a brown skin, but white floury substance, here contrasted with the ordinary native habit of wearing coarse and often dirty clothing below, and a fine white cloth or *lamba* over all.
- 6.—Fetch the dead on which to place the living? *Ashes and fire*; alluding to the common native practice of fetching a live coal or two in a handful of ashes.
- 7.—Standing erect, he gazes on heaven (lit. "the creator"); stooping down, he gazes on the oxen's footprints? *Rice*, which while growing stands erect, but when ripe bends downwards.
- 8.—The foot above the leg? *The leaves of the horirika*, an edible arum, whose broad leaf is compared to a foot, and its stalk to a leg.
- 9.—Earth under the person, the person under dry grass, dry grass under water, and water again surrounded by earth? *A water-carrier, and the waterpot she carries*, together with a ring of dry grass used as a pad for the waterpot, the water carried, and the earthen *siny* or pot holding the water.
- 10.—When the little one comes, the great one takes off its hat? *The great store waterpot in a house*, from which the straw cover or hat is removed when water is drawn with a horn or a tin ladle.
- 11.—Dead before it begins to bluster? *A drum*; referring to the bullock's skin of which it is made.

In the appendix to the book three specimens of Conundrum Games are given, the custom being for the proposer to mention first a number of things, from a dozen to thirty, calling upon the rest of the party to guess what they are when he has done. In the first of these a number of insects, birds, and household objects are mentioned by some more or less vague description of them, such as: "Adornment of the Sovereign? *The people*." "Horns (i.e. protection) of the people? *Guns*." "Top-knot of the town? *A big house*." "Two-thirds of his sense gone before he gets arms and legs? *A tadpole*, when it changes to a frog;" etc.

In the second game all the different parts of an ox are described in an enigmatical way, thus: "God's pavement? *Its teeth*." "Two lakes at the foot of a tree? *Its eyes*." "Continually fighting, but not separating? *Its lips*." "Blanket worn day and night and not wearing out? *Its skin*;" etc.

In the third game occur the following: "Fragrance of the forest? *Ginger*." "Fat of the trees? *Honey*." "The lofty place, good refuge from the flood? *Antanànarivo*." "The lofty place, good for sheltering? *Amlôhimânga*."\* "Rising up and not questioned? *The roof-posts of the house*;" for a native, when rising up from the mat, would invariably be asked, "*Ho aiza moa hianao?*" "Where are you going?"

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\* Because of the woods which cover the slopes of the hill.

## CHAPTER III.—SONGS.

Next in order in this collection of folk-lore we find a number of native Songs or *Hiran' ny Ntaolo* ("Songs of the Ancients"). The Malagasy people (at least those divisions of them with whom we are best acquainted, in the central and eastern provinces) are very fond of singing and of music, and have a very correct ear for harmony. They like singing in parts; and when they hear a new tune will often improvise a tenor, alto, or bass accompaniment. The native tunes are somewhat plaintive, and are often accompanied with the regular clapping of hands and the twanging of a rude guitar or other instrument. On moonlight nights the children and young people will stay out of doors until the small hours of the morning, singing the native songs, in which they take immense delight. It will be seen from the following specimens that although these are not rhymed or metrical, they have nevertheless a certain rhythmical 'swing' or flow, and a parallelism of structure, and are arranged in somewhat regular form as regards couplets and stanzas.

Several of these songs are in praise of the sovereign, and were chiefly composed in honour of the persecuting Queen Ranavalona I., who reigned from 1828 to 1861.

In heathen times, that is, until the late Queen's accession in 1868, it was customary to salute the sovereign as the "God seen by the eye," the visible divinity (*Andriamànitra hita mäsö*). Here is one of these laudatory effusions addressed to the former Queen:—

1. Salutation, Rabodonandrianampoina !\*  
Suns (there are) not two ;  
Suns but one only (namely),  
Rabodonandrianampoina !
2. Going to Imànga,† she's no stranger ;  
Coming to Iarivo,† Sovereign of the land.
3. A shield of beaten gold ;  
Rising up (she is) light of the heaven ;  
Stooping down, lamp of the earth.

Some of these songs are wordy and full of repetitions, especially in the choruses, which are very much in what we should call, in English, the "tra-la-la" style; but several are composed in a grave and serious strain, some enforcing the honour due to parents, others expounding the nature of true friendship. In one of these latter the hearers are cautioned not to make "mist friendship," which soon dissolves, nor "stone friendship," which cannot be joined again if broken; but to form "iron friendship," which can be welded again if severed, or "silk friendship," which can be twisted in again; not "tobacco friendship," liked but not swallowed, nor "door friendship," liked indeed, but pushed to and fro; and so on.

As in the proverbs and oratorical pieces, so also in some of these songs, the different places in the central province are referred to, in some cases with a punning on their names, to the effect that although they may be called so-and-so, those only who act in accordance with the name have truly such-and-such qualities. Thus:—

\* This was the official and semi-sacred name of the Queen, meaning, "The beloved of Andrianampoina," her first husband.

† Shortened forms of Ambôhimànga and Antanànarivo, the ancient and present Capitals.

A place-name is Tsianòlondròà (lit. "Not-for-two-people");  
 Yet it's not the place is (really) Tsianolondroa,  
 But 'tis the wife who is "not for two people."

A place-name is Ambòhipótsy (White-village);  
 Yet it's not the place is (really) Ambohípoty,  
 But those who hate uncleanness *are* white.

A place-name is Ambòhibelòma (Village-of-farewell);  
 Yet it's not the place is (really) Ambohíbeloma,  
 But it's those who go home who say, Farewell.

Similar allusions are often brought into Malagasy canoe songs. Many of these are both musical and amusing, and few experiences are more pleasant in Madagascar travelling than to glide rapidly down or across one of the large rivers in the early morning, the time when they—the eastern rivers, at least—are smoothest, and in a large canoe, with plenty of paddlers, to listen to the rowers' songs. They will often improvise a song, one of them keeping up a recitative, in which circumstances which have occurred on the journey are introduced, while the others chime in with a chorus at regular intervals, a favourite one being "*He misy va?*" "Oh! is there some?" This question refers to various good things they hope to get at the end of the day's journey, such as plenty of rice, beef, sweet-potatoes, etc., these articles of food being mentioned one after another by the leader of the song. A little delicate flattery of their employer, the European they are rowing, is often introduced, together with praises of his hoped-for generosity in providing these luxuries for them; something in this style:—

E, misy va?	Oh, is there any?
E, misy re!	O yes, there's some!
E, ny vorontsiloza, zalahy e?	Oh, the turkeys, lads, O?
E, misy re!	O yes, there's some!
E, ny gisy matavy, zalahy e?	Oh, the plump-looking geese, lads, O?
E, misy re!	O yes, there's some!
E, ny akoho manatody, zalahy e?	Oh, the egg-laying fowls, lads, O?
E, misy re!	O yes, there's some!
E, ny Vazaha be vola, zalahy e?	Oh, the very rich foreigner, lads, O?
E, misy re!	O yes, there he is!

and so on, *ad libitum*.

My friend the Rev. J. A. Houlder amusingly describes the canoe songs he heard on a journey down to the eastern coast, and gives a free translation of one of them. He says, "the men burst out with,

'Kalamak' o! Kalamak' o! (very loud and quick.)  
 Kalamak' aron' ê! (softish and quick.)  
 E! e! e! Kalamak' e! (softer and slow.)'

"After an unsuccessful attempt to get rum from their employers, as if to show their independence of the close-fisted strangers who could not be induced to comfort them thus, they mockingly led off with, 'Is there any there?' As much as to say, 'Were we not fools to ask them?' This is a favourite chorus, sung very rapidly, but having a long pause on the first word. The men never seemed to tire of shouting it out after any strain the leader cared to improvise. Thus his thoughts ran on to the work in hand, and he sang,

'To unitedly dig are there any there?'

And was responded to by the chorus,  
‘Are there any there?’

Again,

‘Oh then dig away hard, do not shirk your share!’

Chorus,

‘Are there any there?’

“Thus it went on until the leader thought of the night’s rest and a good supper at the foreigner’s expense before taking it. Liquids having failed, he would try solids, so began to flatter and cajole ‘with a view,’ something after this style:—

‘Then long may our famous foreigners live!

Is there any there?

Of beef and pork what a fill they will give!

Is there any there?

To speak not of poultry so fat and so fair!

Is there any there?

And rice very good they will freely share!

Is there any there?

But, gracious me, what a terrible shame!

Is there any there?

To make such a row in our kind friend’s name!

Is there any there?’

“And so on, until solo and chorus burst out into a joyous laugh of pleasant expectation; and one of the persons to whom they were looking for a gratuity found himself bending unconsciously to each dig of the paddle, and almost shouting out,

‘Then work away hard, you jolly boys there,

Till we all get there;

To feed you well shall we not take care,

When we all get there?’ ”

In another song heard by the writer on the Mâtitanana river (south-east coast), the chorus was, “*Mandany vâtsy, Toamàkina malàza é!*” i.e. “Consumes provisions for the way, famous Tamatave O!” while the recitative brought in all the different villages on the journey from Tamatave to the Capital, ending with Andohàlo (the central open space), and Avàradróva (the northern and chief entrance to the palace).

Among these Malagasy songs are some called *sàsy*, which are employed as dirges for the dead. An example given by Mr. Dahle consists of five different strains, the first of which is in three stanzas; of these the second may be given as a specimen:—

E, malahelo ô! e malahelo ô!

Tomany alina!

E, malahelo ô! ny vadiny etoana!

Tomany alina!

E, malahelo ô! ny zanany etoana!

Tomany alina!

E, malahelo ô! ny havany etoana!

Tomany alina!

E, malahelo ô! ny ankiziny etoana!

Malahelo izy rehetra!

Ah, sorrowful O! ah, sorrowful O!

Weeping by night!

Ah, sorrowful O! here is his wife!

Weeping by night!

Ah, sorrowful O! here are his chil-

Weeping by night! [dren!

Ah, sorrowful O! here are his rela-

Weeping by night! [tives!

Ah, sorrowful O! here are his slaves!

Sorrowful are they all!

\* North-east Madagascar, pp. 7, 8.

A dirge with more variety and thought in it is a memorial song for a native officer named Ratsida, who died in the war with the Sàndrabé, one of the Tanála or forest tribes living near Ikóngo in the south-east of Madagascar, about forty or fifty years ago. The following is an almost literal translation :—

1. Where, do you say, is Ratsida ?  
The memorial stone of Ratsida  
Is north of Isòanieràna,  
South of Itsimbazàza ;  
Vain substitute for a tomb.\*
2. Where was it he was lost ?  
The corpse of Ratsida,  
There at the foot of Ikongo,  
Is food for the ants,  
Lost and dead in the war !
3. How about his relations ?  
The relations of Ratsida  
Are alone in the dark.  
Given up their beloved one,  
Lost and dead in the war !
4. Who then, say, are the desolate ?  
The friends of Ratsida  
Look about them in vain,  
For dead is their loved friend,  
His remains not come from the  
war !
5. How as to his lands ?  
The ancestral lands of Ratsida  
Are grown over with weeds ;  
No longer a meeting-place,  
For he is dead in the war !
6. How as to his tomb ?  
The tomb of Ratsida,  
Its hope disappointed,†  
Unentered by the weary,  
For he is cut off in the war !
7. How as to his slaves ?  
The slaves of Ratsida  
Expect to be scattered,  
Gone to a child who inherits,  
Mouldering on the field he who  
gathered them !
8. How as to his superior ?  
The lord of Ratsida  
Laments in his heart ;  
Dead his servant beloved,  
Killed by a gun in the war !
9. Who then is to blame ?  
No blame to his superiors,  
For his short time of service ;  
The sport of gun and spear,  
His corpse lost in the war !
10. Twas the lot of Ratsida :  
To be killed on his way,  
To be food for the birds,  
To be a meal for the ants ;  
Alas ! he was prey to ill-fortune !

The longest piece in Mr. Dahle's collection of songs is a kind of ballad, in forty-four stanzas of three lines each. It relates the fortunes of an only son called Bénàndro, who would go off to the war notwithstanding the entreaties of his father and mother. Of course he at last overcomes their opposition and goes away with a confidential slave, but soon comes to grief, for he is taken ill and dies on the road ; and the slave has, according to native custom, to bring back his bones to his disconsolate parents, who are ready to die with sorrow at their loss. Although full of repetitions, it has a swinging, almost rhythmical, flow, very like some of the old English ballads, as will be seen by a few specimen verses :—

\* It is considered by the Hova that to die away from home, so that the corpse cannot be buried in the family tomb, is one of the greatest misfortunes that can befall one. Of course this sometimes occurs in the wars, but usually the body, or at least the bones, are carefully brought even for hundreds of miles up to Imèrina to be buried in the sepulchre of their fathers. The memorial stone of Ratsida is a massive slab of dressed granite set up on the roadside on the south-west of Antanànarivo.

† Here the tomb seems to be personified, and is represented as lamenting the absence of its proper occupant.

- |  |   |
|--|---|
| <p>1. Benandro, a darling son,<br/>Benandro, a darling son,<br/>Benandro, a dearly loved one.</p> <p>2. Then rose, say I, Benandro O!<br/>Besought his mother O!<br/>Besought his father O!</p> <p>3. O pray do let me go,<br/>O pray do let me go;<br/>For gone are all the young men, O!</p> | <p>12. Then answered back his father, O!<br/>Then spake to him his mother,<br/>"Stay here, O chip of my life.</p> <p>13. The road you go is difficult,<br/>Diseases dire will cut you off,<br/>Stay here, do you stay here.</p> <p>14. The insects too are numerous,<br/>The fever too is dangerous,<br/>Stay here, O chip of my life."</p> |
|--|---|

However, he goes away under the charge of Tsaramainty ('The good Black'), who is charged to nurse him if ill, to feed him when hungry, to be, in fact, in the place of his father and mother. But, falling ill, he remembers with sorrow his self-willedness and gives directions to Tsaramainty to take his "eight bones," that is, the principal bones of the four limbs, to his parents. Their grief at hearing of his death is pathetically described:—

- |   |   |
|---|---|
| <p>41. Gone indeed is Benandro O!<br/>Gone, and will return no more!<br/>Take me to thee, Benandro O!</p> | <p>43. I grieve for thee, Benandro O!<br/>I long for thee, Benandro O!<br/>Take me with thee, Benandro O!</p> |
|---|---|

The last-mentioned sentiment is a frequent one in the funeral laments of the heathen Malagasy, and indeed is not quite confined to the heathen. For it is still customary for the elderly women of a family, when the tomb is newly opened for an interment, to go in and to call upon their dead ancestors and relatives to come and fetch them. The whole concludes with a "moral" in approved ballad style, warning young men to believe in and obey the words of their parents.

The concluding song of the collection is in a rather imaginative and poetical strain, on the Earth, as the "house appointed for all living":—

- |   |   |
|---|---|
| <p>1. I will humble myself to thee, O<br/>earth,<br/>I will plead with thee, O earth;<br/>For to thee we give up our loved<br/>ones; [ones;<br/>Yes, go home to thee the loved<br/>For thou takest the cherished<br/>ones, [fetch,<br/>And the cherished wife dost thou<br/>Our fathers and mothers dost thou<br/>take,<br/>Relatives we cannot part with thou<br/>swepest off; [earth!<br/>Yes, all alike go home to thee, O<br/>Yes, say I, O earth, earth, earth!</p> <p>2. Then answered also, they say, the<br/>earth, [of the earth:<br/>And thus, 'tis said, was the word,<br/>Do not give blame to this earth;<br/>Do not give censure to this earth;<br/>For the ground you tread on is<br/>earth,</p> | <p>And the water you drink is earth,<br/>And the rice you eat is earth,<br/>And the cloth you wear is earth,<br/>And the night you take rest in is<br/>earth, [earth.<br/>And the morn you rise up in is</p> <p>(3. Dia nitsara ny mpahalala,<br/>Sy nanelanelana ny mahalala:<br/>Aoka re, ry zareo, fa ady sahala;<br/>Mijanona izao izay mankahala.<br/>Aoka ny tany tsy ho mpankahala,<br/>Ny olo-mijanona tsy hankahala.<br/>Fa avelao mba ho ady sahala,<br/>Dia mandefera izay mahalala;<br/>'Zay hendry dia ho finari-tsahala,<br/>Fa tsy mety ho sahala ny olon-<br/>adala.)</p> <p>3. Then the wise ones gave decision,<br/>And the discerning ones inter-<br/>posed: [rel arise;<br/>Let it suffice, ye twain, let a quar-</p> |
|---|---|



Let that rest which would stir up  
 hatred.  
 Let the earth not become an ene-  
 my,  
 Let mankind stay and not bear  
 enmity.  
 For let it be, lest a quarrel arise.

And let those who know be for-  
 bearing;  
 For those who are wise are the  
 happy,  
 And should not make themselves  
 equal with fools.

It will be seen by the Malagasy original of the third verse, as given together with the English translation, that the concluding stanza of the poem is entirely in rhyme; and although several words are repeated, they are of one sound all through, and the lines are almost metrical in structure. (The second stanza also has one ending to every line, the word *tàny*, earth.) I am inclined to think that this poem is not a very ancient one, but is somewhat influenced, at least, by foreign ideas of comparatively modern introduction.\*

For other specimens of native songs, see the late Mr. E. Baker's paper "On the Poetry of Madagascar," reproduced in ANNUAL X, pp. 167-177; and also Mr. Pickersgill's translation of the ballad of Biázavòla in the same No., pp. 247-249.

JAMES SIBREE, JUN. (ED.)

(To be continued.)

## SNIPES SHOOTING IN MADAGASCAR.

WELL do I remember the first snipe I shot in Madagascar. I had been but a very few months in the country, all was quite new to me, every bird I saw had an interest in my eyes—*everything*, I ought to say—bird, beast, or flower, man and his surroundings.

It was in the valley of the River Mangóro. Every here and there along its banks were little isolated ponds, out of which the ducks kept rising. Any man fond of sport can imagine my feelings as I pulled up my gun on an unknown duck, and saw him turn over and come down. In my excitement I ran to pick him up, when—splash! and a flight of another kind rise right under my feet. "Bother it!" I had forgotten to put in a fresh cartridge, so the first barrel naturally refuses to go off, and a few feathers fluttering in the breeze is all the result of the second. "No!"—far away there he is, head-over-heels, after all. Instead of waiting for one of my

\* In the discussion which followed the reading of selections from this paper at a meeting of the Folk-Lore Society when I was in England, it was suggested that in this song we have races of nature-worship or an earth-cult. I do not, however, remember any tradition or custom among the Malagasy which would confirm this supposition, although it is possible that as our knowledge of tribes other than the Hova increases, such relics of an early stage of religious belief may yet be discovered.

men to pick him up, as one naturally would, I seize the other duck and rush off like any schoolboy, who has just killed his first partridge, to secure the second, when—*burr* goes a quail, frightened into flushing by my headlong course. "Quail," I say hesitatingly, for I have never shot one in England; but I remember that dead ducks are not easily found in long grass if once the place is unmarked; so with a mental note that I shall try back for it, I push on. But there is no need, I find, for retracing my steps, for the quail are plentiful, and I soon add one or two to my bag, which on examination prove to be the pretty little bustard-quail, much smaller and harder to hit than the common quail, which I also found a little further on.

What a lovely spot it was to which I then came! The path led up a steep red cliff, on one side covered with forest, while down below rolled the river, its banks dotted with dense vegetation relieved by the greenest of green glades. Out of this forest rose the feathery bamboos towering high above the trees, drooping and interlacing in endless festoons, while here and there could be seen a dark green tree, its whole top one blaze of scarlet flowers. Right before me stretched a vast marsh, through which the river wound, its flatness broken by the tall graceful *bàraràta* reed and the dark green *zózoro*, among which glimpses of the white heron might be seen, and in the ponds they fringe, wild-fowl innumerable. Beyond again, the yellow tinted rushes and grass of the shallower parts gave colour to the scene, and overhead the whistling flocks of teal broke the almost oppressive silence of the place. I little guessed what sport that short grass held for me; all I was then thinking of was the beauty of the view, and how I could circumvent those myriads of duck. Down I went through tangled woods, where little streams babbled and sparkled. What wonderful birds tempted me from my purpose! There, just in front of me, the lovely blue *Kaiiso* cuckoo flirted his unwieldy tail and drooped his purple wings; but sport gained the day over natural history, and I refrained from shooting lest the duck should fly. Peering out from beneath the screen of bushes at the edge, some bee-eaters skimmed close by me, their green and rufous feathers shining like metal in the sun, and their curious whistle sounding weird. Right up above me shrieked the *Fihàka* hawk, as he soared round in ever-widening circles. What a noble bird to look at, but his appearance belies him. How could a bird with wings like that, with carriage and plumage fit for the royal bird, deign to stoop on a half-fledged chick; he might leave that to the ignoble kite, methinks. As I creep out, I mentally hope his presence may keep the ducks down, as it would at home, but not a bit of it, they know he is a hypocrite, and with a noise like rushing water the huge flock rises and circles overhead, but far out of range. Steady! *whizzzzz*, here comes a pair low and down on the wind, right at me; bang! and there goes one, the pace he was flying sending him fifty yards before he falls. The left one missed, but round she comes, bravely facing the danger again for the sake of her lost mate, and down she goes too.

A pang of pity passes through me as I see the pair lying there together, and with something like the feeling a thief must feel on his first success, I examine the breast of the duck. All the feathers are there and unruffled, and I know she has not yet begun to lay, and I feel a degree less mur-

derous. Sport is a cruel thing, perhaps, but I truly believe that sportsmen are kinder-hearted, as a rule, than those who are against it, setting aside the other good traits it develops. But once more looking up, my heart throbs violently as I see some mighty ducks coming, with short sharp strokes of their wings, right into the pool before me. Down, down, down they come, lower and lower, but straight as a die; then with a rush they enter the water, which spurts away before their snowy breasts and falls in showers of diamonds from off their blue-black backs. "They are as large as geese," I whisper; but I can't get at them, the water is waist-deep without the mud, which is already well over my boots. I get as near as I can, and slip in cartridge loaded with No. 1. Up they go, as they see my white coat through the *zozdro* (papyrus), and after them two charges of swan-shot rattling on their thick pinions as harmlessly as dust. Not a feather! Will they come round again? Not they! they are off miles away.

But listen! what is that running and dodging among the long dry grass on the slope? *Kurrrrrrh*; guinea-fowl! as I am an Englishman, but guinea-fowl that evidently don't know English, as the peculiar cry of "Come back, come back, come back," is not in their vocabulary. I run, and so do they; can I get up to them before they reach the covert? How I run, and how hot it is! but it is no good, for, reaching the wood, they rise heavily and skim over the top of the trees, to alight on one of the tallest. Cautiously I creep into the wood again, my dog at heel, but evidently as excited as I am. I reach the foot of the tree, and know the birds are there by the slow wagging of the dog's tail and the working of his lips as he anxiously looks up, but I cannot see them for the tangled mass of undergrowth. "No chance of a flying shot here," I remark, as I now bend this way and now that to catch a glimpse of the tree top. Yes, I see one, and carefully peering round to see that no one is looking, I shoot him sitting—pot him, in fact. What a commotion! one would think an ostrich at least was on its way down, and I involuntarily put my hands and gun above my head—flop! It is too much for my dog, he can't resist, and before I can reach the bird he is trying hard to get rid of a mouthful of feathers. But now I have the bird, what a nuisance he is to carry! and where are all the men? Yet how proud I am—proud of a pot-shot; never mind, it will at least go to disprove what my Malagasy boy said: "*Hianareo Vazaha tsy mahay mitifiborona mipetraka, ary izahay kosa tsy mahay am-panidinana; samy manana ny fombany avy ny olombelona rehetra.*" ("You foreigners cannot shoot birds sitting, and we cannot shoot them flying; well, every one follows his own custom.")

The ducks had all gone down away to the north, where the marsh shallowed off, and I followed them. I had barely reached the shorter grass before "*tuc, tuc, tuc,*" and away goes a snipe. "A snipe as big as a woodcock!" I almost shout as I watch him, and am so much taken by surprise that I never think of firing. There he goes, twisting and turning in true snipe-fashion, but slower and more clumsily than our merry little English friend; then down go his long legs, and he settles among the grass. I mark the place and walk cautiously towards it. "*Tuc, tuc, tuc*" away just behind me goes another, and I turn in time to kill him. "Why, he is the very picture of our solitary snipe," I say, as I pick him

up. There they go, one, two, three, all on the wing together, and all off in different directions, each on his own line, but all eventually drawing together as they alight.

I begin to find the marsh somewhat deeper than I thought, and also that walking knee-deep in mud and water is warmish work in the tropics at noon. There he goes again! my gun goes off wildly in the air, and I find myself recumbent, with my arm up to my elbow in the blackest of black slime. Just as I raised my gun, my foot had slipped into a deep hole behind me, hence the diversion. Getting up, I find the whole place is riddled with such holes, or rather, it is one big hole, with tussocks of grass growing so close together as to hide it. I try to walk on the tops of these, but I might as well try to fly, every fourth step I am either sitting down or plunging wildly forward. I then try walking in the mud; this is better, but one wants the legs of a heron to do it comfortably, and I don't possess them. I have a friend very good at this sort of walking, but then he is six feet high. However, the snipe are there, and one must get on somehow. In front of me I see an opening beautifully green, with no mud, but it looks suspicious. I have seen something very like it on the English border moors. I try it gently, it quakes, but seems firm enough; I venture, and promptly go through—to where? I wonder; I glance pleadingly to the men and am somewhat cheered by the amused expression on their faces; surely, I think, they would not laugh if I were going for good. At the same moment I feel a footing, and there I am, waist deep, with my cartridges all wet in my coat pockets. I wriggle out somehow, and a happy idea strikes me: Why should the men not drive the birds, while I pick a better beat? This idea is eminently satisfactory, for walking ankle-deep is infinitely more easy than walking knee-deep, and I find I get plenty of shots.

The actual shooting is easy, and one feels much more elated after getting five or six couple than one has any right to do. The fact of their being snipe deceives one into thinking they are as hard as the English birds to bag, yet they are really very little harder to hit than a "cock" in the open. However, after they have been shot over once, they are very much more difficult, for they rise wild and get away at a great pace.

I have described snipe shooting, so far, in the large marshes, but perhaps the prettiest shooting is in the narrow valleys, with a gun on either side. In such a place the birds dodge more, and one often gets overhead shots, or birds which have been frightened further up coming down in full flight; these latter are by no means easy shooting. Then again, in such places one often picks up a partridge or two, and not unfrequently a duck, to vary the bag. There is very pretty shooting of this kind to be had at Ambôhidratrimo, if one knows where to look for it. I remember my six-foot friend and myself getting a small but very mixed bag there, consisting of 17 snipe, 3 guinea-fowl, 2 partridges, 3 pigeons, 2 parrots, and 5 ducks.

The natives who follow one enter keenly into the sport and, however long they may be with you, never recover from their astonishment at shooting on the wing. A clean shot is almost invariably followed by an explosion of laughter and numerous remarks yelled at the top of their voices to the other beaters.

The snipe are very plentiful indeed in some places, but rarely get up in whisps, while the hard walking and the tropical heat are against large bags, which seldom amount to over 18 couple for two guns, and rarely reach that; from 10 to 14 couple is nearer the average for one day.

I may here add some few remarks on the habits of the snipe before finishing this paper. The breeding season is from the end of October to the beginning of April in Imérina. They breed twice in the season; the cock-bird tending the young of the first brood, while the hen sits on the second. They make their nests on the banks of the smaller marshes, where the water cannot reach them, the nests being only of very slight structure and composed of dry grasses. I have never found more than two eggs in one nest, and the natives tell me this is always the case. This is rather a curious fact, for most birds of this Order lay four, as a rule. The eggs are similar in shape to those of the English snipe, but have not the peculiarity of the very thin shell, and are very much more like the egg of the common lapwing in appearance. As in the English snipe, they are enormous when compared with the size of the bird. The hen, when frightened off her eggs, feigns lameness or inability to fly.

The plumage of male and female are very much alike, the male being perhaps a little the darker; and the general appearance is almost identical with that of the solitary snipe occasionally met with in England. The dimensions of a full-grown female bird, which is larger than the male, are as follows:—

Length from tip of toe to point of bill	18 inches.
Girth .....	8 $\frac{3}{4}$ "
Length of leg .....	6 $\frac{1}{2}$ "
Expanse of wing .....	20 $\frac{1}{2}$ "
Weight .....	5. 143 oz.

C. P. CORY.



### “HER MAJESTY’S,” MADAGASCAR.

EVERYBODY knows that there are English missionaries and a French Resident-General in Madagascar, but most people will be surprised to hear of a native theatre. And a Theatre Royal too, the performance about to be described having been patronized and attended by the Sovereign of the island and Her Consort the Prime Minister. There were present also, by special invitation from Her Majesty, the representative of France aforesaid, accompanied by several members of his staff, and the Vice-Consul of Great Britain, accompanied by his wife.

The audience found themselves, at seven p.m., seated before a curtain of striped rofia-palm cloth, suspended on a cord by means of napkin rings, of all things in the world, and surmounted by a big map of Madagascar, to indicate the character of the play, which was named in the programme and book of words, printed at the Queen's press, "FITIAVANTANIN-DRAZANA," that is, *Patriotism*, of the sort, be it understood, which consists in cracking up one's country.

The prologue made that clear at any rate. It was sung by the full company of performers, as the curtain opened and disclosed them occupying a stage of classical simplicity: nothing more than the bare tiled floor of the schoolroom which served as a theatre. Behind were their entrances and their exits, to wit, two classrooms, crowded with peeping assistants and supernumeraries. A piano filled one corner of the stage, and an harmonium occupied the other. At the latter instrument there presided a clever-looking specimen of young Imèrina, the Gilbert and Sullivan of the entire entertainment, who supported the chorus in calling upon all and sundry to "behold a kingdom maintaining its independence, gliding swiftly into glory, a couch immense but not big enough for two."

The metaphors seem a little mixed, but one must applaud the patriotism and the artistic firmness with which the key-note of the play was sounded. Of the singing, justice demands that it be described as very creditable indeed, both as regards time and tune. In fact it raised lively expectations of coming opera.

And now, where on earth would a speculative mind consider the opening scene of a Malagasy play named *Patriotism* likely to be laid? That clever-looking islander at the harmonium evidently understood the value of an intellectual surprise, for he began with Marco Polo at home in the bosom of his family. There were five grown-up daughters, perched stiffly on a form, with sewing and knitting in their hands, and an only son, who sat beside his father at a table studying geography. Marco Polo himself was engaged, of course, in writing an account of a wonderful country lying off the east coast of Africa and washed by the waters of the Indian Ocean. It was interesting to observe that his pen was gifted with that amazing celerity which characterizes property quills all over the world. The work, however, did not proceed too fast: it was interrupted by parental admonitions addressed to the girls respecting their household duties, part of the conversation being carried on in musical phrase, and part in ordinary speech.

When at length the chapter on Madagascar was finished, the enthusiastic author proposed to read it aloud, and, encouraged by applause, waxed so excitedly eloquent that he burst a blood-vessel and fell prostrate on a piece of matting which had been considerably spread upon the tiles for the salvation of his Sunday suit. The idea of making a foreigner die of sheer admiration for one's native land is patriotism super-sublimated. Alas for Marco Polo! Two doctors were hastily summoned by the alarmed family, but nothing could be done. Why these *medicos* were Chinese was not explained. Possibly they formed part of a collection of specimens brought home from lands remote. "Abandon hope, ye relatives," they chanted, "Marco Polo dies." Poor man! he was rather a singular being, in a light-coloured Kalmuck-like mask overtopped by a tweed helmet-cap intended to conceal his fore-

head and make an European of him ; and the contrast between him and his daughters, whose faces revealed a negro ancestry, made him more singular still.

After dying in an excellent cause, the famous Venetian necessarily furnished matter for a funeral. And here was a great opportunity for native artists, for the Malagasy have a genius for the rites of woe. They will descend into a chambered tomb, just opened, and rearrange the swathed inmates, on the admission of a new member of the ghastly party, with a nonchalance which amazes both Europe and Africa. "What is the matter with you ?" somebody once asked a half-witted fellow who was howling bitterly by the roadside. "Nothing, I am only rehearsing," he replied ; "there is a great deal more crying than laughing in the world, and I want to be able to do my share properly." Possessed apparently with a similar idea, the Malagasy have perfected themselves in the business of interment. Consequently, Marco Polo's funeral was a success. But when the officiating priest came on, wearing a solemn mask with a rubicund nose, a swaying chasuble and a mitre, and graced the procession with a peculiar ecclesiastical strut, the whole audience, including the Queen on her dais, broke into peals of laughter. The carriage of that churchman had not been studied in the city of the Doges, it was evident.

The mourners, however, left their dead in peace. But he was not to rest long, for in the next scene an angel appeared to rouse him. There was a waving of white wings, and a bold, declamatory soprano solo sustained by an accompaniment of richly modulated chords on the piano, which was opera *à la mode*, and which woke up the house as well as Marco. The latter grumbled a little at being disturbed, but the angel was imperative and commanded him to rise forthwith and proclaim the glory of Madagascar to all the world. This he proceeded to do, after a fashion which largely obtains in a country whose affairs are shuffled on by fits and starts of forced labour, that is, he passed the responsibility on to somebody else. As a sheeted ghost he appeared amongst the recumbent forms of the family of '*J. G. d'Abreu*' of Portugal, all asleep upon the floor, with the exception of the white-haired grandmother, who was provided with a truckle-bed, and, in a vision of the night, inspired one of the boys with a desire to discover the wonderful island of which he had dreamed. That the lad's waking story was not all stuff and nonsense was proved by the production of a morsel of strange food which he had found by his side, and by a written description of Madagascar concealed therein. This device struck some of the critics as having been suggested by the conjuring trick of a vanished card being found in a loaf of bread : one of many such marvels performed by a French wizard in Antananarivo shortly before. Whatever may have been the source of the idea, it was successfully made use of. Whilst the food was being tasted and the writing discussed, in marched two members of the family who were supposed to have been out shooting. One carried a fowling-piece, and the other a big carpet-bag and a sort of make-shift tent. They were thus fully equipped for a voyage of discovery, which they decided to make without further ado, immediately on hearing how the family had been visited. These were the Brothers '*J. G. d'Abreu*,' father and uncle of the boys above-mentioned. It is necessary to insist

upon having the initials pronounced, as young Madagascar has a weakness in that direction, by which they manifest their progress in civilization, as the Americans do. '*J. G. d'Abreu*' ran through the programme and book of words like a vein of burlesque. If the reader should want to know why and wherefore, he must consult some history of Madagascar, say that by Captain Oliver (2 vols., Macmillan, 1886), from which he will learn that *Joao Gomez d'Abreu* discovered the west coast of the great African island on the 10th of August, 1506, and named it *San Lourenço*.

Before getting to Madagascar, however, the historical Portuguese and his apocryphal brother met with an adventure in the wilds of the "Dark Continent." Encamped near a thicket, they were busy collecting firewood, when a ferocious animal, said to be a *bear*, emitted a crescendo of premonitory roars, and then rushed out to attack them. One of the two presented the fowling-piece and fired, but failed to kill, whereupon he seized the brute with both hands, jumped on its back and rode off in triumph, leaving his brother to trot behind with the carpet-bag and other impedimenta. A judicious commentator might read better comedy between the lines of this scene than the author ever designed, for it was a traveller's tale effectively illustrated.

Landing on the west coast, the voyagers were received by a party of the aborigines, *more Sakalava*, that is to say, they were bullied and blustered at, and forced, for the sake of goodwill, to divide the contents of the carpet-bag. About three years ago the agent of a Liverpool firm doing business in the Sakalava country was compelled to pay a fine of seven hundred and fifty dollars by the local chief for allowing a vessel to be wrecked on his highness's beach without any plunder in her. No wonder then, that *J. G. d'Abreu* Brothers were blackmailed in 1506. They submitted to the extortion philosophically, and perhaps lost nothing by it in the end, for their ruffian hosts gave them a great deal of information about the island, and also demonstrated its fatness, produced monster roots of manioc and sweet potatoes from the soil, called lemurs from the forest and employed them to fetch honey, hooked eels and fish from a neighbouring pond (a big bath-tub surrounded with brushwood), danced a tribal hornpipe, and then became escort to the nearest Hova Governor, and, moreover, caused the audience no little merriment by the desperate efforts which they made to teach the foreigners the native names of things.

Arrived at the Governor's residence, the d'Abreus (*semper J. G.*) were welcomed with much hospitality, although not with one whit more than many an European visitor has received on the shores of Madagascar. They were fed until they slumbered of repletion and visibly expanded in the evening clothes which they had produced somehow from the carpet-bag under stress of distinguished society. After the feast the Governor summoned his young men and women and cleared the floor for dancing. First there was an entirely native performance by three young girls, the peculiarity of which may be described by the common Malagasy saying: "I do not praise my wife's dancing, for her arms are there to speak for her." The "light fantastic toe" is at a discount in the ballet of Madagascar. Following this indigenous display, some half-dozen couples of latter-day barbarians, in the western war-paint of swallow-tails and



fashion-book robes, enlivened the scene with a neatly-executed schottische and a mazurka. "That's our style," the travellers expressed approvingly to the Governor in dumb show, "pray introduce us to partners." This being done they indulged in a laughable imitation of the vigorous white-man's prancing, which the Malagasy do not all affect, their taste both in music and dancing being as quiet as that which they manifest in colours and patriotism is loud.

The Governor's dinner naturally afforded an excellent opening for the actors to pay court to the real Authorities before them in the audience. They drank Her Majesty's health and likewise a health to the Prime Minister, with musical honours from the band and the support of a standing house. And there, if our playwright had only known it, was his climax and grand finale. But he must needs round off the story of the adventurous Portuguese by taking them home again *viâ* Liberia, where they were waylaid, killed and partially devoured, by cannibals, but afterwards revived by the white-winged declamating angel. A little tediousness, however, was easily forgiven in the midst of so much variety; and the curtain was finally drawn to at eleven o'clock.



X

# MALAGASY TERMS OF MONETARY VALUES.

THE object of the present short paper is to offer explanations, more or less probable, of the meaning of some of the units of monetary value in use among the Malagasy, more especially of those which, I believe, have not hitherto been explained. There is, I confess, some amount of guess-work in the suggestions offered, and I shall be thankful to be corrected by any one who can give us a more probable approximation to the truth. Without further introduction and apology I shall proceed to give what appear to me to be not improbable, or at least not far-fetched, explanations of the meanings of words representing the chief monetary values, some of which, however, are not new, and of the correctness of which there can be no doubt.

*Vòamèna.* This word, as those who are acquainted with the Malagasy language know, represents the twenty-fourth part of a dollar, or twopence. The word literally means "a red seed (or fruit)," but what particular seed or fruit is referred to has, I believe, hitherto been unknown. In looking through Bentley and Trimen's "*Medical Plants*," however, I recently came across this passage under *Abrus precatorius*, L.: "The seeds... are employed in India as a standard of weight, which is much used by Hindoo jewellers and druggists under the name of *Rett* or *Rati*. This weight is equal to  $2\frac{1}{8}$  grains; and it is said that the weight of the celebrated Koh-i-noor diamond was thus ascertained by means of these

seeds." Now, as the seed is scarlet, with a black spot on one end (and hence called *voamaintilàny* by the Malagasy), it struck me that this was probably the long sought *voamena*. *Voamena* seems to have been its former name, as given by Flacourt, and probably is yet a provincial name. It belongs to a climbing shrub (*Abrus precatorius*, L.), very widely, if not universally, distributed in the island, and also occurring in all tropical countries. It is sometimes called the Crab's Eve vine, and the seeds, which are narcotic, are employed in many countries for necklaces, rosaries, etc., and are therefore often called "prayer beads.\*"

The weight of one of these seeds being  $2\frac{3}{4}$  grains, it is not unlikely that *voamena* was, instead of in silver, as at present, formerly the weight in gold, as  $2\frac{3}{4}$  grains are approximately equivalent to twopence; and this apparently points to a time when the ancestors of the Malagasy, probably while still in their original Malayan home, were accustomed to weigh gold money, and not only silver, as now.

Upon the *voamena* are based several other money values: *ilàvoamèna*, *lâsiray*, *ròavòamèna*, *lâsiròà*, and *lâsitèlo*.

*Ilavoamena*=*ila* and *voamena*, *ila* meaning the side of a thing, the fellow to a thing, and hence sometimes the corresponding half. Now as the seed in question is a bean, it naturally splits into two halves (cotyledons), one of which would be exactly expressed by *ila*. *Ilavoamena* therefore is the half of the *voamena* (i.e. the fellow to the other half), or a penny.

*Lasiray*=*ila* abbreviated, *sy*, and (*i* being used for *y* in the body of words), and *ray* (*iray*), one, and means one (*voamena*) and a half (or literally, a half and one), and therefore means threepence.

*Roavoamena*=*ròà* and *voamena*, *roa* meaning two. *Roavoamena* therefore means fourpence.

*Lasiroa*=*ila*, *sy*, and *roa*, two, i.e. two and a half, or fivepence.

*Lasitelo*=*ila*, *sy*, and *telo*, or three and a half, or sevenpence.

*Venty*. This word represents eightpence. The meaning of *venty* is somewhat difficult to define with precision, but it generally has some such meanings as these: the essence of a thing, the solid substance, or a unit. Is it possible therefore that *venty* is a second unit of value and means one podful (like *èranambàtry* referred to below), a pod of this plant generally containing four, and sometimes five, seeds. Four seeds would therefore be equal to eightpence.

*Lâsiventy*=*ila*, *sy*, and *venty*, i.e. a *venty* and a half seed over, or ninepence.

*Iraimbilànja*. This word signifies tenpence. But how does it come to be equivalent to this sum? No explanation, I believe, has as yet been given. The former part of the word is undoubtedly *iray*, one, and the latter, *lànja*, has reference to weight. But what is *mbi*, a prefix to *lanja*, or a word in itself? I take it to be nothing more nor less than *amby*=in addition to, a word commonly used in Malagasy numbers, e.g. *telo amby ny folo*, thirteen. The *i* is of course in Malagasy always the

\* The Carat, the weight used in weighing precious stones, especially diamonds, was originally the name given to the seeds of the Abyssinian Coral-flower or Coral-tree, used largely for weighing gold, etc. They belong to a plant (*Erythrina abyssinica*) somewhat closely allied to *Abrus precatorius*.

equivalent of *y* in the body of words, and the *a* is omitted in the compound word. *Iraimbilanja* therefore probably means, the full weight and one seed over, or tenpence, the *lanja* evidently referring to the *venty*, or complete podful.

Another explanation is, however, possible, though I think the above much the more probable. There is the word *omby* (or *mbý*) often heard in the phrases *omby ázy*, *tsy omby zato*, etc. Now this word *omby* does not mean, large enough to hold a thing, but *just* large enough to hold it. *Tsy omby zato* (more than a hundred) really means, a hundred does not reach up to the number, or does not fill it. And so *mbi lanja* might mean, reaching up to the full weight (of a *venty*). The *mbi lanja*, in this case, would therefore be an obsolete form of what is now spoken of as *lônga lanja* and *fêno lanja* (up to the weight, or, figuratively, up to the mark). *Iraimbilanja* on that supposition would mean, the full weight and one over. But this explanation, as I have said, does not commend itself to my mind.

*Sâsanângy* is another money value (a shilling and fourpence) of which no explanation, I believe, has as yet been offered. In the absence of any other, I venture to give the following suggestion, which perhaps may be somewhat of a mere guess. What then is *sasanangy*? The word evidently means a half of *nangy* (*sâsaka*, half, the *ka* being dropped in the compound word). But if *sasanangy* (a shilling and fourpence) be a half of *nangy*, it stands on the face of it that *nangy* must originally have been two shillings and eightpence. Now if the meaning of *venty* as given above be correct, we have in it perhaps a starting-point. *Venty* being a complete podful (or four seeds), may not the number four have originally formed the basis of numeration? Now four *venty* or podfuls would be sixteen seeds, that is, sixteen twopences, as *venty* is four *voamena* or eightpence. This therefore would come exactly to two shillings and eightpence. The word *nangy* is at present unknown in Imérina as a money value, but is in use in Antsihânaka, where, unfortunately for the above theory, it means threepence; but does it follow that the original value should be necessarily always the same? Now if the above explanation of *venty* and *nangy* be correct (which I grant is far from certain), then we have, as the original unit monetary values, *voamena*, one seed (or twopence), *venty*, 4 seeds (or eightpence), and *nangy*, 4 × 4 seeds (or two shillings and eightpence).

*Eranambâtry*. Besides the units of value already referred to, the Malagasy have another money value, *eranambatry*, equivalent to  $\frac{1}{3}$  of twopence. This is derived from the seed (also a bean) of the Pigeon-pea shrub called by the natives *ambâtry* (*Cajanus indicus*, Spreng), a plant which is also widely distributed in the tropics. The former part of the word, *êran* (*erana* or *erany* in full) means, pervading the whole, full, complete, and a podful of these beans is, as a matter of fact, equivalent in weight to  $\frac{1}{3}$  of twopence in silver.

*Rôdanambâtry*,  $\frac{2}{3}$  of twopence, is simply the above with *roa*, two, *eran* being omitted. *Efatrambâtry* and *diminambâtry* are the same, with *êfatra*, four, and *dîmy*, five, prefixed.

The lowest monetary values of the Malagasy are *vàriraventy*, *vàrirôaventy*, *vàritêloventy*, *vàriêfabenty*, *vàridimiventy*, *vàriênimbenty*, *vàristoventy*, *vàrivàloventy*, and *vàrisiviventy*. These also mean the weight in

silver of so many seeds, or rather grains, of unhusked rice,\* from one up to nine, *eranambatry* being equivalent to *varifoloventy* (or ten grains), if there were such a word. Now as a matter of fact, any one of these numbers of grains of rice (for they are still used in weighing money) does not strictly correspond with the money value thereby signified; *varifoloventy*, for instance, being equivalent, not to seven grains, as its name implies, but to ten. For of course in these primitive modes of weighing, strict accuracy is not to be expected.

*Vôla fôlo*. This monetary term means ten shillings, literally, ten *vola* (*vola*, money). Unless indeed *vola* originally meant a shilling, which there seems to be no reason to suppose, I can offer no suggestion as to its meaning. Mr. Dahle says that *vola* is probably the Arabic *folus*, which means money, "especially small money."

Mr. Dahle has also shown (ANNUAL II. p. 84) that other monetary values, not referred to in this paper, are probably Arabic; *ariary*, a dollar, being from *ar-riyal* or *ar-rial* (from the Spanish *real*); *lôso*, two shillings, being from *nusf*, a half; *kirôbo*, a shilling, from *rôba* (a quarter); and *sikajy*, sixpence, probably through Arabic from the Spanish and Italian *scods* or *scudi*. Thus we see that the Malagasy money system is a mixture of two elements, native and Arabic.

R. BARON. (ED.)

## IN RE ROBERT<sup>X</sup> DRURY'S "FICTION."

I HAVE received the following from Captain Oliver. The letter of Mr. Hirst, as will be seen, effectually disposes of the theory that the story of Robert Drury, as narrated in his *Journal*, is a myth of the imagination. Indeed no one, I believe, in Madagascar, acquainted with the language and customs of the people, ever believed otherwise than that the story was, substantially at any rate, a faithful narrative of fact. It is gratifying to hear that this most interesting book is to be reprinted with Captain Oliver's notes.—R.B.(ED.)

Nov. 7, 1889.

My dear Mr. Baron,

At p. 21, No. IX. of your ANTANANARIVO ANNUAL for Christmas, 1885, I noticed a manuscript pencil note which I found in the copy of *Drury's Journal*, 2nd edition, belonging to the London Library, referring to *Hughes' Letters*. I have had an opportunity of consulting the *Correspondence of John Hughes*, the Poet, at the British Museum; and now forward you a copy of the letter of Mr. Hirst, which, instead of disproving

\* In former times the wheat-corn supplied a basis of weight among the Anglo-Saxon and Teutonic nations.

Drury's veracity, as indicated by the anonymous note above mentioned, confirms the fact of the wreck of the *Degrave*, and the fact of Mr. John Bembo being there, and his having written a detailed account of his adventures.

Hoping this will reach you in time for your next Christmas ANNUAL,  
Believe me,

Yours very truly,

S. PASFIELD OLIVER.

P.S. Mr. T. Fisher Unwin is to publish shortly a reprint (expurgated) of *Robert Drury*, with my notes.

LETTER CXLVI.

Rev. Mr. Hirst,\* F.R.S., to the Rev. Mr. Duncombe.

*Lenox*, off Madagascar, Sept. 6, 1759.

My dear Friend,

When we left England, three important expeditions were carrying on, the first under Commodore Moore in the West Indies, the next under Admiral Saunders against Quebec, and the third, under Admiral Boscawen, sent to the Mediterranean. The event of these must now be determined and known at home. I hope they have all answered the public expectations.†

Our squadron sailed from St. Helens, in company with the latter on the 15th of April, 1759. In the chops of the Channel our two fleets separated, to pursue our respective destinations.

Our first place of rendezvous was the island of Madeira, where we anchored May 2. This is a very fertile spot, but the generality of the inhabitants are poor; at which you will not wonder, when I tell you how

\* The writer of this letter (who was the eldest son of the Rev. Dr. Hirst, late rector of Benwell and Sacum, Hertfordshire, and was educated at St. Peter's College, Cambridge), after having served as chaplain on board several of His Majesty's ships (particularly the *Hampton Court*, when despatched to Lisbon after the earthquake, in 1755, of which city he made a drawing in its ruins), was at this time chaplain to the *Lenox* and secretary to Rear-Admiral Cornish. While he was on the coast of Coromandel he was present at the sieges of Pondicherry, Velour, etc., and on June 6, 1761, he made an accurate observation of the Transit of Venus over the Sun at the Government House at Madras, in company with Governor (now Lord) Pigot, etc., of which an account is given in the *Philosophical Transactions*, Vol. LVI, and in the *Gentleman's Magazine* for 1762, p. 177. In March, 1763, he was appointed chaplain to the factory at Calcutta, by the favour of Mr. Vansittart, then Governor of Bengal, and resided there in general esteem till the year 1765, when he returned to England, with his excellent friend, in His Majesty's ship the *Panther*. In their passage, Mr. Hirst took a view of the Cape of Good Hope, which was engraved in 1766 by Mr. Canot. At the second Transit of Venus on June 3, 1769, Mr. Hirst was one of the assistants to the Astronomer-Royal at Greenwich, and an account of his observation was published in the *Philosophical Transactions*, Vol. LVIII, p. 361, and in the *Gentleman's Magazine* for 1770, p. 401. Being now in easy circumstances, happy in himself and in his friends, nothing could have tempted him to wander again over the face of the great deep but the ties of gratitude and the cares of friendship. On a heart like his these had claims that were irresistible. As chaplain to the Commissioner he therefore embarked with Mr. Vansittart on board the *Aurora*, in Sept. 1799; and in that fatal voyage accompanied, alas! the supervisors to "that undiscover'd country from whose bourn no traveller returns." Let this suffice—the wound is too painful to bear any further probing.

† They did most fully witness the conquest of Guadalupe and Quebec, and the destruction of the Toulon fleet. Admiral Cornish's squadron was no less successful by contributing largely to the reduction of Pondicherry and Manilla.

much they are pestered with swarms of idle priests and monks—m  
drones, who live upon the honey of the hive ! "*Sic vos non vobis mell  
catis apes.*"

Here I had the pleasure of seeing a comet in the constellation Cr  
From its great southern latitude, I believe it was not visible in Engla  
as it disappeared before it made any considerable progress to the nor  
ward. I transmitted a crude account of it to my good friend Comm  
sioner Meade, of the Customs, but by being on board, and wanti  
proper instruments, could not be very exact in the observation. Ho  
ever, I traced its path in the heavens with sufficient accuracy  
determine its motion and inclination to the ecliptic.

After we had taken in our wine and other necessities for our voya  
we prepared to leave this island, and were under weigh May 8. (The  
next rendezvous was St. Augustine's Bay, on the west side of the isla  
of Madagascar, where we arrived August 11, and having comple  
our water, and refreshed our people, sailed from thence September 1.

The accounts of this place are very imperfect, from its being so lit  
frequented by Europeans, except in time of war, when the English E  
Indian fleets generally touch here to be supplied with fresh provisio  
etc. In short, it is under the same predicament to us that we were  
the Romans, being "*penitus toto divisa orbe.*"\* But be this as it may,  
is a very fine island, productive not only of the necessities but even o  
delicacies of life. It would fill many sheets to acquaint you with  
anecdotes I collected, and the observations that occurred, during  
stay there. Suffice it to say (merely for the sake of thrusting in a po  
cal quotation) that in the offing of St. Augustine's Bay we saw ma  
whales, which frequently swam very near the ship, and were near half  
long, an awful sight. These the natives called *tushes*. They sp  
water to an incredible height, and in the most stark calm will,  
flouncing and lashing their tails, stir the sea to a tempest. They abou  
so much in these parts that it is no uncommon sight to see ten or twe  
of them spouting together, which at a distance very much resemble  
sea breaking on a ledge of rocks :—

..... Huge of bulk,  
Wallowing unweildly, enormous in their gait,  
Tempest the ocean—here Leviathan,  
Hugest of living creatures, on the deep,  
Stretch'd like a promontory, sleeps, or swims,  
And seems a moving land—and at his gills  
Drawn in, and at his trunk spouts out a sea !

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\* The best and most authentic account ever given of Madagascar was published in 1  
by Robert Drury, who, being shipwrecked on the south coast of that island when a boy  
the *Degrave* East Indiaman, lived there as a slave 15 years, and after his return to Engl  
among those who knew him (and he was known to many, being a porter at the East I  
House) had the character of a downright honest man, without any appearance of frau  
imposture. In confirmation of the truth of this narrative it exactly agrees, as far as it g  
with the journal kept by Mr. John Benbow (eldest son of the brave but unfortunate Admi  
who, being second mate of the *Degrave*, was also shipwrecked, and narrowly escaped b  
massacred by the natives with the rest of the crew, Drury and three other boys only excep  
Mr. Benbow's journal was accidentally burnt, in the year 1714, in a fire near Aldgate,  
several of his friends who had seen it recollected the particulars and its corresponde  
with Drury's. To the circumstance of its being thus destroyed, as well as the subjec  
it, the compiler of Mr. Benbow's life in the *Biographia Britannica*, Vol. i. p. 688, se  
to have been a stranger ; instead of "a large and very comprehensive book," it was onl  
journal, like those kept by every sea officer.

rare John Milton!

Madagascar is divided into a number of petty kingdoms or states, the most of which is that of Brecess, which (as the natives informed me) abounds with gold mines, as does the kingdom of Volambo with those of silver. And there is great reason to credit this assertion; for the bones of many of the sheep and other cattle killed on board our ship were so much covered with a metalline scale as to resemble teeth of iron. This the miners are said to look upon as an infallible indication of gold being under the surface on which such cattle graze. I will not answer for the infallibility of this trial, but am sure it is more consistent with reason than the idle tales of the divining rods. In the first volume of the learned Boerhaave's *Elements of Chemistry*, page 111, I met with the following observation; the author, treating of gold, says: "In Madagascar there is a very soft soil which runs like lead under a gentle fire." For the truth of this he refers to Flacourt's *History of the Island of Madagascar*, ch. 49. I have not this book; yet I have observed a large button of a yellow caste, like those which the natives wear on their breeches, tied, by way of ornament, to the crown of Madagascar princes' heads.\* This, I found was remarkably soft, which I think it was bare metal, but they all affirmed it was fine gold. I mention but one circumstance more to corroborate the above opinion. Not far from Tent-rock in St. Augustine's Bay, in the king of Madagascar's dominions, is a mineral spring, which also affords reason to think that there are mines of some sort or other in its neighbourhood. However, our European Mammon has not yet set foot on this rich soil; but, according to Milton, first taught men to value gold:—

..... By him first  
Men also, and by his suggestion taught,  
Ransacked the centre, and with impious hands  
Rifled the bowels of their Mother earth  
For treasures better hid.

I am, etc.,

W. HIRST.



like manner Drury says, p. 44: "The men adorn themselves with 'mannelers,' which are rings for their wrists; and these both men and women of distinction wear. They are made of gold (but where they get it is more than I know and perhaps worth enquiring of), often of silver, but more often of copper, which I found at length is produced and used in the country, as well as iron."

In p. 376, describing the dress of the king of Ferraingher (called by the Europeans Djwl), he says, "On his forehead were several gold beads; about his neck was a very d necklace, on each wrist about six mannelers of silver, and four rings of gold on his

p. 313, "They have silver in some of the most mountainous and inland parts of the country, and know how to make ear-plates of it and mannelers, so that I have the strongest reason to think the country produces it; nor is there much reason to doubt but gold is to be found there."

Therefore it is true that the French have established a colony in Madagascar, these hidden treasures may perhaps have been one of their inducements, and not commercial views only, for their neighbouring islands of Mauritius or Bourbon are so conveniently situated,"

A MALAGASY<sup>X</sup> FOREST.

A GREAT part of the country between the interior of Madagascar and the low-lying land of the east coast is covered by a dense and continuous forest, with innumerable detached outliers of woods and thickets, great and small, which doubtless once were joined to their big neighbour. This mighty primeval forest forms one of the principal features in the physical character of the island. It stretches probably for a distance of 800 miles in a northerly and southerly direction, and in an easterly and westerly averages about 30, its greatest width, which is in the north-east of the island, being not improbably 60 or 70. There is thus an area of about 24,000 square miles of forest-clad country. The interest of this forest, however, consists not in its dimensions, but in its occupants. So numerous and curious are its forms of animal life, so rich and varied its vegetable productions, that no lover of nature could fail to be inspired with a desire to dive into and explore its mysterious depths. It is not pretended of course that this forest can rival in extent or grandeur some of the great primeval forests of the world, such as that, for instance, on the banks of the Amazon; but for strange and anomalous forms of organic life, it stands second to none. In this respect, however, it is not altogether a *terra incognita*: much has been done by various naturalists to bring to light the animals and plants that find a home within its dark recesses, and yet its novelties are by no means exhausted, nor all its treasures discovered.

A day's ramble in the forest! If the day be fine, what can be more delightful? No matter what your taste may be, scientific, artistic, or poetic, you will find an inexhaustible supply of material for study and reflection. But if the day be wet, nothing can be more wretched. The trudging through the mire, the pushing through the wet bestragglings bushes, the ceaseless drip, drip, drip of the myriad leaves above you, and the trickling of the little water runnels up your arms and down your neck, all conspire to damp both body and spirits. That man must be a veritable enthusiast who can ramble in the forest in wet weather and call it pleasant.

To give a general description of this great eastern forest of Madagascar, its physical features, its animal and vegetable life, the economic products which it yields, and some of the native superstitions connected with it, is the object of the present paper.

*Physical Features.* The forest, as has been already stated, stretches for about 800 miles along the eastern side of the island. In the north-east it reaches down to the sea, but at about 17° Lat. it recedes from the coast and divides into two parallel strips (the eastern one being the broader), which again unite somewhere on the eastern border of the Betsileo province. The greater part of the space thus enclosed forms the plains of Ankar and Antsihanaka, once occupied by a lake, on the site of which are occasionally to be found fossil leaves and fruits that, in days long gone by, were washed into it from the forest on the surrounding heights.



The country which the forest covers varies much in altitude, from about 1500 to 4500 feet above the sea. It is almost wholly of a mountainous character, the mountains running generally in a northerly and southerly direction. But these in the course of ages have been largely broken up by the numerous rivers and streams, which have changed the aspect of the country into a perfect labyrinth of hill and dale. The endless ascents and descents of the forest-clad country seriously detract from the pleasure of the pedestrian, for no sooner is one hill surmounted than he is brought to the foot of a second, which only lands him at the base of a third, to be succeeded by a fourth, making him perpetually hope the next may be the last. But the true lover of nature almost loses his sense of fatigue in the excitement and pleasure afforded by the infinitely varied and beautiful forms of vegetable and animal life that are around him. The tall trees of innumerable species, in fierce competition with their neighbours, rearing their great bodies heavenwards that they may spread out their foliage and open their blossoms in the light above, the fantastic foldings and twistings of the snake-like lianas, the countless shapes and tints of the leaves, the bright colours of some brilliant beetle, the delicately traced wing-design of some happy butterfly, the merry chirping of a gaudily adorned bird, the hurried steps of the busy little ants, the languid movements of a chameleon, with its strange skin and stranger eyes, the patient watching for prey of a red three-cornered spider, the tiny mosses and delicate ferns nestling snugly among their big brothers under the rocks,—all these and a thousand other objects of interest and beauty help one to forget the exertion and the toil caused by the difficulties of the road, and make one feel that it is with a lavish and artistic hand that their Great Maker has formed and bedecked them all. Moreover, there is in travelling in the forest a strange and fascinating illusion, a vague feeling of expectancy, which persistently recurs, in spite of disappointment, that somewhere on in front something of exceptional interest will be found. This feeling also buoys one up against fatigue, though it is one that must be guarded against if one wishes to know something of the treasures the forest contains.

Occupying a mountainous country, and being situated on the side of the island exposed, for a great part of the year, to the south-east trade winds coming up with rain-laden clouds from the Indian Ocean, the forest region by no means lacks moisture. It would be interesting to know what the annual rainfall is, but as yet no observations of the kind have ever been made. The character of some of the plants, however, especially the tendency in some of the ferns to become viviparous, points to a humid climate.

As for the soil which supports the luxurious vegetation of the forest region, it is not naturally of a fertile character, but the reverse, being almost entirely composed of decayed gneiss or other allied crystalline rock. The fertility of the country therefore must be due almost entirely to the copious supply of rain.

Being of a mountainous character and well supplied with moisture, streams, with waterfalls and rapids rush through almost every ravine. Some of these waterfalls hide themselves away in the most charming spots, veritable fairy dells, and only betray themselves by their distant tones.

To get to these lovely dells is often an extremely bewildering task, not only on account of the dense undergrowth and liana cables which impede the way, but also because of the echoes and the sound-shifting breezes, which apparently seem bent on befooling and luring away the intruder. To know the exact locality, distance, and character of forest sounds is by no means so easy as one would suppose.

The roads in the forest are mere tracks cut through dense masses of vegetation, which diverge and wind in endless bewilderment. Even the highway from the chief port to the Capital cannot be dignified by the term road; in many places it is a mere rut. The rains being frequent and heavy, every depression in the path is often filled with mud sometimes knee deep, and it is only by a series of undignified leaps that one can pass over them unbemired. In some parts of the forest, owing to the steepness of the ground and the heavy rains, the path is scored into deep and slippery ravines. Now the road passes though a steep and narrow gulley between high banks, debarring all progress except in Indian file, then it follows the windings of a stream, with broken branches of trees and awkward projecting logs threatening one's head. Moreover, it is not at all uncommon to come across the stumps of trees that have been hewn down for timber almost blocking the entire pathway, or the intricate roots of others appearing above the surface as gnarled knots or loops ever ready to trip up the unwary traveller, so that constant vigilance is required. The trunks of trees that have been felled by the woodman, or that have fallen of themselves from insufficiency of foothold or sheer old age, often lie athwart the path. These must be surmounted, crept under, or escaped by a detour, as circumstances permit.

The valleys are frequently occupied by bogs, to pass over which various alternatives are before you: You may sometimes clear them by a series of leaps from tuft to tuft, any one of which may land you in the mud; you may wade them by doubling up your nether garments, or taking them off entirely; you may be carried on the back of a swarthy native; or occasionally you may pass over an apology for a bridge in the shape of a number of parallel round poles or bamboos laid end to end on the ground, and placed on rickety or treacherous supports, the whole being more or less invisibly sunk in the mire. Such being the character of the forest roads, King Radama had some reason for his statement (if indeed it is founded on fact), that he had two generals that were a match for any European officers, General *Hazo* and General *Tazo* (General Forest and General Fever).

Notwithstanding all these untoward circumstances, however, the forest so teems with objects of interest and beauty, and is so remarkably free from dangerous animals, noxious insects, or poisonous snakes that, provided the weather be fine, anyone who is prepared to rough it is well repaid for any little annoyances he may have to experience. Some of these objects of interest let us now proceed to notice.

*Animal Life.* It would be an endless task, even were it possible, to describe all the forms of animal life that pass their existence in the shade of this immense forest, and we must therefore content ourselves with a brief account of some of the most noteworthy and common. It is well known that the fauna of Madagascar is of the most interesting and

remarkable character, no country in the world indeed affording more anomalous forms of organic life. Separated from Africa since the middle of the Tertiary era, as the island has probably been, and thus allowing of an immense amount of specific, and even generic, differentiation, it is not surprising to find the fauna differing largely from that of the neighbouring continent. None of the large animals, and but few of the smaller, that roam on the plains or in the woods of South Africa are anywhere to be found in Madagascar. Indeed the animal life of this country presents such remarkable and anomalous types that it has been seriously proposed to constitute the island into a distinct zoological region. A large proportion of the mammals, and a still larger proportion of the birds, possess such abnormal structures that to classify them satisfactorily has always been a puzzle to naturalists.

The largest wild animal\* found in the island is the wild boar†, of which there appear to be two species, *Potamochoerus africanus*, Gray, and *P. Edwardsii*, Grandid., the latter, it is said, being the larger of the two, and occurring in the eastern forest. This animal is so abundant that it often commits sad havoc in the native plantations, which are therefore generally securely guarded against its depredations by strong fencing.

The people often hunt the wild boar with dogs, but whether for food or for mere sport I am not able to say. Considering how extremely numerous these beasts are, it has often surprised me how very seldom they are to be seen. I have perhaps roamed over the Malagasy forests as much as anyone, and yet, though I have heard them in the night, I have never yet seen a single specimen. This may doubtless be accounted for by the fact that their prowling expeditions are only undertaken in the night, and that they remain securely in their hidden lair in the daytime.

But the most abundant of the forest animals are undoubtedly the lemurs. Of these creatures about thirty species are known in Madagascar. Some of them are found only in the western part of the island, others are confined to the east, some live in the forests, one species (the Ring-tailed Lemur) inhabits the bare rocky hills of the southern interior, others find their habitat among the bamboos of the river sides, others again make their home in the tall rushes of the marshes; some roam over a wide extent of country, others are exclusively confined to particular localities, but a large number of them have their habitat in the great eastern forest. To describe the habits of these creatures one by one would be impossible, as no careful observations have ever been made on the subject. Besides, many of the lemurs are nocturnal, rendering it a difficult task to learn their habits in their native haunts. It is scarcely necessary to say that all the forest lemurs, like the monkeys, which they distantly resemble, lead an arboreal life, skipping from tree to tree with the most marvellous agility. Some of them roam the forests singly, some in pairs, others are gregarious, wandering about from place to place in bands of from eight to a dozen. It is an interesting sight to see a family of these agile graceful creatures

\* Excepting of course the wild oxen, which, however, are simply oxen run wild.

† For an interesting account of a wild-boar hunt see a paper by Rev. C. P. Cory in ANNUAL xiii. p. 73.

flinging themselves one after another from tree to tree in their forest journeyings, the father or perhaps grandfather of the family leading the way, the baby lemurs cling tightly to the long thick hair of their mothers. Occasionally they may be observed whiling away their time in mere play, evidently brimful of frolicsome enjoyment. The lemurs vary considerably in size, some species being as large as a good-sized monkey, others being no bigger than a rat. Many of the smaller species (e. g. the Dwarf Lemur, *Microcebus Smithii*, Gray) build nests in the tops of trees in which they pass the day in sleep, coming out from their hiding-places only when the stars are overhead. One of these small nest-building lemurs (the Brown Mouse Lemur, *Cheirogalius milii*, Geoffr.), according to the observations of Mr. Shaw, who kept one in captivity for some time, apparently hibernates during the winter months. The majority of these creatures, however, are devoid of nest-building or hibernating propensities.

In some places the cry of the lemurs may be heard almost continuously, making the forest ring again. A prolonged melancholy wail is characteristic of one or two of the more common kinds, giving the impression that the creature is suffering from intense pain. The cry of others is a mere grunt, frequently repeated. One species occasionally quacks like a duck. The natives who live in and about the forest can recognise the species at once by their voices.

The lemurs differ widely in their power of domestication. Some species seem entirely unable to live in confinement, they refuse all food, become sulky, melancholy, and irritable, showing their teeth when approached, and finally die of grief and starvation.

Several kinds are caught in traps by the natives and kept as pets,\* more especially the common Brown Lemur, which is easily tamed and becomes extraordinarily affectionate. One that I had some years ago seemed never to be so happy as when on his master's shoulder enjoying his caresses. Almost immediately after capture, this creature becomes remarkably confiding, losing all fear. It likes nothing better than being petted. By sundry little grunts, by various signs and gestures, it endeavours, in the most unmistakable manner, to coax you to scratch and pet it, during which proceeding it will put down its head and shut its eyes in high enjoyment. It will even endeavour to put your hand on its head, as much as to say: 'Please sir, I want stroking.' But beware of lifting it, especially by the fore legs, as unless it be exceptionally forbearing, it will be almost sure suddenly to turn round and bite you, a species of treachery of which many of the lemurs are guilty.

The food of the lemurs is various. The dentition of most of the species is adapted to animal rather than vegetable diet, though it is quite certain that the latter is preferred by many of them. Fruit, birds and insects probably form the chief part of their food.

A more remarkable animal than any of the lemurs, however, is the famous Aye-aye (*Cheiromys madagascariensis*). Its structure is so anomalous that it is difficult to know what position to give it in any system of classification. Being a nocturnal animal, little is known

\* In the "Animal Creation" by T. R. Jones it is stated that some of the lemurs "are trained to hunt like dogs." This, however, is probably incorrect.

of its habits in its native haunts. Almost all our knowledge of it has therefore been derived from specimens in captivity. In Carpenter's "Zoology" it is said to be rare, and Mr. Gosse, in one of his books, supposes it to be probably nearly extinct. In Cassell's "Natural History" too it is said to be "a rare animal." But this, I feel confident, is a mistake. From what I have gathered from the natives in different places, the creature seems to be pretty common, its nocturnal habits and the superstitious fear with which the natives regard it accounting for its apparent rarity. The Malagasy say that it only lives in the dense parts of the forest, where it builds a nest two or three feet in diameter of twigs and dead leaves in the thick foliage of the upper branches of trees. This is entered by a hole in the side, and in it the creature sleeps the whole day, prowling about in quest of food only at night. The male and female, which have but one young one at a time, accompany each other in their midnight wanderings. Its food seems to be chiefly insects and grubs which hide beneath the bark of trees. It therefore taps the trees, and by the sound it quickly finds out the lurking places of its prey, and with its long claw drags out the dainty morsel. Owing to the superstitious fear of it on the part of the natives it is somewhat difficult to obtain specimens. To many of the people no amount of money would be sufficient to induce them to go in pursuit of it. It is, however, sometimes taken to the coast, where it may be bought for a few dollars.

The *Fôsa* (*Cryptoprocta ferox*, Benn.) is another remarkable animal found in the forest and, I believe, also in the open country, particularly in rocky mountainous districts. I have myself never met with one in the forest, nor have I ever heard of any European that has, but there can be no doubt that it lives there. Nothing, so far as I am aware, is known of its habits in its native haunts. It is said, however, by the Malagasy to climb trees and to be a ferocious, bloodthirsty creature, which latter character it also manifests when in captivity, hence its specific name. In length it is only about fourteen inches from the snout to the root of the tail, and yet it is the largest of the Malagasy carnivora. It forms a link between the cats and the civets, partaking of the characters of both.

Inhabiting the forest also are two or three small animals belonging to the Civet Family; they are known as *Vontsira*. They are pretty little creatures, are easily tamed, and become very affectionate. In captivity they seem to be almost devoid of fear, but owing to their mischievous propensities, they can scarcely be allowed to roam about the house without danger to the crockery. They are splendid rat and mouse hunters, and in a remarkably short time the premises become freed from these and other objectionable vermin. But besides the rats and mice they have unfortunately a liking for poultry, and especially their eggs. Give a *Vontsira* an egg, and watch the operation; it is interesting. It does not bite the end off and then suck out the contents, but it first of all rolls it to within a few inches of some hard object, then lies on its side, takes the egg between its fore feet, and violently flings it against the obstacle. When it has thus cracked the shell, it laps up the exuding contents.

To spend a night in the forest is an experience worth having.

Bivouacked in some open glade, through which a small stream creeps lazily along, with a warm cheering fire to keep off the dew and chill of the night, one gains a quite different knowledge of the forest from that one gets in the daytime, for all nature is not asleep even in the midnight hour. Just as the darkness is setting in, the fireflies with their tiny lanterns flit about among the bushes; and the cicada, of various species, perched on the trunks of trees, commence their strange song. They are small in size, but they certainly make a big din. Well may the Malagasy proverb say: "Don't be like the cicada, whose voice fills the whole valley, though the creature itself is not a mouthful." The sound it makes is not a buzz-z exactly, and it is not a hum-m. It is a deafening, unceasing, rasping, irritating monotone. Some tribes in certain parts of the world keep these cicada in cages for their music! As the darkness increases, various nocturnal creatures come forth from their hiding-places like thieves in the night, every now and then stealthily pouncing upon their unconscious and slumbering prey. Keep awake awhile, and listen to the strange and, for the most part, mysterious sounds. Suddenly there is a terrific scream. Some bird or beastie finds itself all at once in the jaws of death. And what is that ceaseless creaking throughout the night? Fancy or fear pictures some strange hobgoblin; it is, however, nothing but the leaves of a screw-pine twisted and strained by the breeze. And what is that remarkable string of sounds for all the world like water bubbling out of a bottle? It is the *Toldho*, a kind of cuckoo with a very long tail, disturbed in its night's repose. And then, at regular intervals, cuck-cuck-cuck-oo, cuck-cuck-cuck-cuck-oo, lowering in tone as it proceeds, what is that? Another cuckoo, the *Kankàfotra*. This bird never seems to go to bed; it cuck-ooes through the day, and cuck-ooes through the night. Does it get snatches of sleep at intervals I wonder? From the stream or marsh close by there rises the unmusical croak of the frogs. After an interval of silence, you hear first of all a single croak, then another, and a third, until gradually there arises a perfect chorus of croaks, followed by a few minutes' silence. After a few moments' rest, the tune is resumed, for croak the creatures must and croak they will throughout the night, "for tis their nature to." The tree-frogs also, perched on the leaves, not a whit behind their cousins in the marsh, pass the night in croaking. Some of these tree-frogs are remarkably pretty creatures, spotted and barred with green and black and red and white. One fellow, a pretty large one of three or four inches in length, is, as most of the tree-frogs are, all green, and unless your eye happens to light on it on the leaf on which it is squatting, it will absolutely defy detection. Numerous other strange and weird noises are to be heard during the night in the forest, but from what throats they proceed it is beyond me to say.

If you have never passed a night in the forest, have you ever roamed in it when the foliage was wet with recent rain? If so, you will probably have felt the annoyance of the forest leeches (*Dintandla* or *Dimàty*). The worst experiences I have had of this kind have been in the south-eastern part of the forest. You turn up your trousers, feeling a slight itching, when lo! your legs are streaming with blood, and firmly fixed on your flesh are numerous slippery worm-like blood-suckers about half-an-inch in length. You get hold of them to pull them off, but they object to retire

from the feast. You pull, and like a piece of elastic, they allow themselves to be stretched to twice or thrice their length, however, as it breaks no bones, they are persistent, and as the old song says: "The more you try to pull them off, the more they stick the faster." But observe the natives; they give the creatures a sudden smack, which startles them, they can then be removed with ease.

Of the various forms of myriopoda that are found in the forest there are two, if not more, species of *Sphaerotherium*. One is black, the other green, the former being much the larger of the two. When you take them up, they immediately roll themselves into a ball like a hedgehog, depending, however, not upon spines for protection, but upon their horny armour-like exoskeleton.

Other creatures trust in their mimetic powers for immunity from their foes. One of these, a gecko, or, at any rate, allied to the geckoes, is the most marvellous piece of mimicry I have ever seen. It is arboreal in its habits, and the creature exactly resembles a piece of bark in colour with lichens growing upon it. But as Mr. Sibree has fully described the appearance of this remarkable creature (Annual xiii. p. 120), it is needless for me to enter into further particulars. I need only add that its scientific name is *Uroplates fimbriatis*, Daud.

In the number of "Nature" for 17th May, 1883, appeared a letter entitled "Curious habit of a Brazilian Moth" by Mr. E. Dukinfield Jones, in which the author stated that he had observed a kind of moth in Brazil engaged in sucking up water in large quantity through its proboscis. Now this strange habit is by no means confined to the Brazilian *Panthera Apardalaria*, for I have seen the same thing in two species of lepidoptera in the eastern forest, and imagine that the phenomenon is by no means rare. These two creatures are very common by the sides of streams and damp places in and about woods on the Ankay plain. One morning, while sitting by the side of a mountain stream in that part of the island, one of these insects (*Papilio Oribazus*, I believe, a blue-winged moth very common in that locality, and measuring about four inches from tip to tip of its wings) settled on the wet mossy bank. Wishing to procure it as a specimen, I approached it as cautiously as possible, and, to my surprise, I found that it was so absorbed in what it was about as to be apparently totally unconscious of my proximity to it. Noticing strange and unaccountable movements, with sundry jerkings and probings of its proboscis, I very quietly and noiselessly sat down near it to watch it more closely. I observed that every second or two it ejected (not merely exuded) a drop of pure liquid. I picked up a leaf that was lying near, folded it, and slowly inserted the edge of it between the insect's body and the ground so as to catch the liquid, and reckoned that about thirty drops were ejected per minute. I held the leaf for about five minutes, and at the end of that time there was caught in it about a salt-spoonful of what seemed to be pure water, without either taste or colour. After watching the moth for a time, I seized it by the wings between my thumb and fingers with the greatest ease, so utterly lost did it appear to be to what was going on around it. The abstraction of food from the water thus passed constantly through the body was doubtless the object of the strange action.

In another spot I saw as many as sixteen of these large moths within

the space of a square foot on damp ground, all engaged in the same occupation. Some of them ejected the liquid more frequently and in greater quantity than others, and I noticed one of them squirt it so as to drop fully a quarter or a third of an inch beyond the point on the ground perpendicular to the end of its body.

I also saw in another place a number of white butterflies (or moths?) all busily engaged in the same curious operation; and I imagine that further observation would prove that the phenomenon is somewhat common.

All who have journeyed through the great forest must have frequently noticed large black or dark-brown balls attached to the higher branches of trees, which are called *votry*. They are generally a little larger than a football, but occasionally attain the dimensions of a bee-hive. These are ants' nests. If you cut one down and examine it (a rather ticklish business), you will find that it consists of a tough substance exactly resembling dry cowdung. This, however, is not to be obtained in the depths of the forest and is therefore not the material of which it is made; it is composed of earth mixed with vegetable fibre, but so manipulated as to yield a stiff parchment-like substance. On the outer surface are numerous entrances into the interior. Now, if you can find it in your heart to be so ruthless and cruel, take a large knife and cut a vertical section through the nest, you will then discover that it is made up of more or less irregular concentric galleries, the floors of which are about as thick as a shilling and about a quarter of an inch apart. Each of these floors or layers is supported by a number of pillars rising from the one immediately below it. Near the surface of the nest a number of ants may be seen, but in the centre there is a perfect swarm of them, all doubtless wondering what can have caused such a terrible catastrophe. But they waste not a moment of time in idle speculation. See! they are all as bustling and as busy as they can be, and their first thought is to save their helpless young and their guests. For guests indeed they have; if you carefully examine the ants, you will see one here and there with a very minute red insect on its back, evidently intent, even at the risk of its own life, on securing the safety of its little guest. This insect, placed under a magnifying lens, turns out to be a beetle. What purpose it serves in the economy of the nest, I have never been able to make out. Attached to the branch or twigs that pass right through the nest there are little leathery caps, which contain eggs and small grubs. Of what are these the larvæ? I know not. If someone, gifted with more than ordinary patience, could study these *votry* and the life of their inmates, the result would, I am sure, prove of interest.

And then there are the strange dwellings of the larvæ of beetles, moths, etc., where they await their developement into a higher form of life. Attached to a twig you will occasionally see a little bag beautifully woven into rather coarse meshes of silk more bright and shining than silver and about a couple of inches in length. On another twig there is a reddish bladder about an inch long, the insect being in a small oval bag in the centre. This bladder is full of air and has a hole at one end. You press it in, but it expands again like an india-rubber ball. It is quite a remarkable cocoon. Hanging from the underside of leaves too may be seen the little homes of grubs formed out of small portions of grass stems, the insects lying at full length inside. Or sometimes these little dwellings



are stockaded by numerous sharp stiff projections that would be far from agreeable to the palate of any bird that might make an attempt on the dainty morsel inside.

Whatever may be said to the contrary, birds are not abundant in the forest, and of singing birds worth listening to there are absolutely none. The long and shrill whistle of the black parrot is perhaps more frequently heard than the voice of any other bird. I have already referred to the *Kankafotra*, a kind of cuckoo. Another cuckoo (*Coua caerulea*, L.), dressed all in blue from head to tail, may very frequently be seen (for it is not at all a shy or timid bird) hopping from twig to twig on the lower branches of the trees. This bird is a weather prophet to the natives, for, rightly or wrongly, they assert that if the *Tailso* (or *Kaitso*) calls when the weather is fine, it will be wet, and if wet, it will be fine. Suspended to branches overhanging the streams may be frequently seen the nest of the *Fôdîfêtsy* (*Ploceus pensilis*, Gm.). It is a most ingenious structure, in shape exactly resembling a chemical retort with the bulb uppermost. It is generally fourteen or fifteen inches in length and made of dried grass most neatly interwoven. How the bird manages to interlace the different grasses and yet preserve a perfectly circular entrance of more than a foot in length is a perfect marvel. Another nest, a thick heavy structure, may often be seen also overhanging streams. It belongs, I believe, to the *Fôdiâla* (*Oxylabes madagascariensis*, Briss.). The nest is entered by a hole in the side, always facing the stream, and over which is a porch, perhaps to throw off the rain. There can be no doubt that these two birds build their nests in the position they do as a means of preservation from their enemies, and probably from the lemurs especially.

With regard to the forest birds, I have two or three times witnessed a phenomenon which some years ago I mentioned in the ANNUAL, and, as it may be of interest, I quote what I then wrote. "The birds are not often seen except in flocks. A little twittering is first heard, one or two birds are seen, and then, in a few minutes, one is surrounded by a large number, appearing as if by magic. The same thing has been noticed by others. But the strange thing about it is that 'birds *not* of a feather flock together.' I have seen as many as twenty or thirty birds, of six or seven different species, all travelling in the same company. Can this be for mutual defence?" Since writing the above I find that Mr. Bates, in his "Naturalist on the Amazon," noticed the same thing in the forests of Brazil, and attributes it to the same cause.

*Vegetable Life.* How powerless one feels when one attempts to describe the wonderfully varied and almost endless forms of vegetable life that pass their days in the great eastern forest of Madagascar. I have heard the forest spoken of as monotonous. Nothing could be further from the truth. An English wood, consisting entirely of oak or fir trees might be called monotonous, but the term can scarcely be applied to a forest in which you rarely meet with two neighbouring trees or shrubs of the same species. If one thinks merely of tree trunks and green leaves in the abstract, then perhaps the forest may be called monotonous, but even in this monotony there is infinite variety. Why, no two leaves are alike; they are of all possible shapes, sizes and tints; and as for the tree trunks, they all differ one from another in girth, height, and the guests

which partake of their hospitality. Look at that big fellow there, which, supported and buttressed by its own offshoots, stoutly maintains its own against all the blasts that blow; it is a perfect world in itself. Its own foliage is spread out in the sunlight far above, but in its generosity it offers itself as a refuge and a home for its less fortunate brothers, for those who, from inherent inability to cope with their kind in the great struggle for existence, or from an unmanly desire to live with as little trouble as possible, mere parasites and hangers-on, have determined to live at the expense of their big neighbour, for there is a good deal of human nature even in plants. And what a variety of them on that one trunk, a complete little flora in itself! I once counted as many as seventeen different species on one tree, belonging to widely separated genera and even widely separated orders. There is the *Pothos chapelieri*, with its curious padde-shaped leaves, climbing apparently to the utmost height of the tree; then there are the ferns, species of *Polypodium* especially, some of which, with undivided leaves, form a ring, often a series of rings, right round the tree. High up in the branches, and clinging close to the trunk, its hemispherical and deeply-wrinkled cabbage-like leaves lying one within the other, appears a strange fern, as round and as large as a football. It is *Platycerium madagascariense*, Baker, or *P. Ellisii*, Baker, both endemic in the island. Very delicate and graceful little ferns belonging to the genus *Hymenophyllum* cluster together and help to hide the nakedness of their big protector. Of ferns that live on the trunks of trees I know at least fifty different species, and even this of course does not exhaust the list. Of orchids there are probably a greater number even than of ferns. They belong chiefly to the genera *Angraecum*, *Bulbophyllum*, *Polystachya*, and *Mystacidium*, many of which are extremely beautiful. Very frequently there may be seen a shrub growing out of a tree trunk, which seems to form part and parcel of the tree itself; but when its leaves are examined, they are found to be quite different from those of its host. It is a *Loranthus*, of which there are about a dozen species, or a *Viscum*, of which there are probably more. It is a veritable parasite, having pushed its roots right into the tree for the purpose of sucking its juices, and thus flourishes at the expense of its neighbour. A species of lichen (*Usnea* sp.), the "Old man's Beard," hangs very abundantly from many of the trees. Other lichens too of various hues, fungi, and delicate little mosses, the life of each one of which would be an interesting study in itself, also play a prominent part in this heterogeneous community.

Outwardly at least concord and mutual helpfulness seem to prevail among the numerous vegetable forms in the forest. Plants of the most diverse character, and belonging to the most widely separated families, are found in harmonious company. Here a beautiful tree-fern finds shelter beneath a forest giant, the tree-fern in its turn spreading its green umbrella over a number of herbs, some of which have become so familiar as to twine themselves around its knotted stem. Beneath these again some soft tender moss, or a minute brilliant red fungus, or the common pyramid-shaped lycopodium, for all the world like a miniature Christmas-tree, with its fructification dangling from its branches as so many ornaments, finds its home. No space is lost. The germs of vegetable life are ever ready to seize upon unoccupied spots.

There is scarcely a crevice or a cranny anywhere without an occupant. But, alas, all this harmony and brotherly kindness is illusory. Every individual has secured its position by its own unaided energy, and the apparent harmony we see is but the complex result of individual enterprise. There is constant rivalry and competition going on, and, as in the human, so in the plant, world, certain families, or rather certain members of families have, through some unknown powers of their own, or advantageous outward circumstances, been more successful than their rivals and have gained the day. For instance, we may see in some parts of the forest that bamboos, or the cardamom plant (*Longôzy*), or small palms, have almost wholly monopolised the ground.

No one can be long in the forest without observing that the plants range themselves, roughly speaking, into three tiers. There are first of all the trees, long gaunt things that have been obliged to stretch themselves upwards to get their leaves and flowers to the light. Viewed from some elevated point outside, it is these that seem to form the forest; but within, they are merely the canopy of the forest proper. It is often difficult to know what these trees really are, for to get at the flowers and leaves they must be either climbed or cut down, neither of which proceeding is always practicable. Then come the shrubs, which have to be content with such light as they can get. Below these again there is an entangled mass of herbs, ferns in profusion, grasses, mosses, prickly blackberries, and what not, pushing and elbowing one another for dear life. Try to make a way through them, and you will soon be convinced what a dense, prickly, complex entanglement it is.

Although there is no part of the year to which the flowering season is confined, there is nevertheless a much greater number of plants in bloom from the beginning of October to the end of February than at any other period. A few odd plants are in flower all the year round. The paucity of striking or beautiful flowering plants in the Malagasy forests is a feature often remarked on by travellers, although the fact is by no means remarkable, as it is pretty much the same in the tropics all the world round. There are a good many, however, though few in proportion to the total number of plants, which possess handsome flowers. There are, for instance, two or three species of balsam, found in the damp parts of the forest, quite as attractive for floral beauty as many of our garden balsams. Several members of the *Acanthus* Family too possess very pretty flowers, as do also some of the orchids. Among the climbing plants may be mentioned *Tristellateia madagascariensis*, with numerous racemes of rich yellow flowers. The trees most remarkable for their floral beauty are perhaps the various species of *Dombeya*, one or two of *Rhodolena*, known as *Fôlona*, a few belonging to the Order Melastomaceæ of the genus *Dichatanthera*, and known as *Kôtrokôtroka*, etc.

Of edible forest fruits I know but one which can be said to be of excellent flavour. It is known by the Malagasy as *Vbantsimatra*, and the tree which yields it I believe is *Salacia dentata*. It is, however, so long since I tasted it that all I can remember of it is that it was oval, large and luscious. Then there are the *Rôtra*, from a species of *Eugenia*, and the *Voàramônitsina*, from one or two shrubs belonging to the genus *Vaccinium*, yielding a fruit allied to the cranberry. Besides these I know no others worth mentioning.

**Products.** The forest products of economic value are numerous, and investigation would undoubtedly bring many others to light which are as yet unknown. Of these the timbers are the most important, the principal of which are the following: *Voambdàna*, which possesses a hard reddish-brown wood largely used by the natives in the manufacture of tables, cupboards, etc., etc. There appear to be two or more kinds, but they all belong apparently to the genus *Dalbergia*. Of *Lalòna* there are many species, all belonging to the genus *Weinmannia*. They are largely used in house-building. *Hàzomainty* is probably an ebony, of which several kinds are found in the forest. *Hàzovòla* is said to resemble rosewood. Mr. Ransome says it is *Derris uliginosa*, but this is surely a mistake, as *Derris uliginosa* is a climbing plant. *Ambòra*, is a generic term for various species of *Tambourissa*; they are small trees, possessing very hard and durable wood. *Nàto*, probably *Chrysophyllum Inophyllum*, has a very hard wood, somewhat like mahogany. The Bètsimisàraka frequently use the trunks for coffins. Its bark yields a red dye. *Vànaana*, or *Voànaana*, of which there are several kinds, belong to the genus *Eleocarpus*. The wood is much used by the natives in house-building. *Hàrahàra* (*Neobaronia phyllanthoides*) possesses an excessively hard wood. *Vivaona* (*Dilobeia Thouarsii*) is a large tree, but whether the timber is of much value I cannot say. *Varòngy*, of which there are many kinds, belong chiefly, if not entirely, to the genus *Ocotea*. The wood is extensively used by the natives. *Famèlona* possesses a beautiful and useful wood. *Hàzondràno* possesses a valuable, fine-grained, white wood, much used by the natives. It is an *Eleodendron*, though there may be more than one species. *Mòkaràna*, of which there are several kinds, are large trees, whose wood is employed by the natives for canoes, etc. They belong to the genus *Macaranga*, the term being derived from the native name. *Pàka* seems also to be the name of several large trees, for the most part species of *Uapaca*, though one appears to be *Homalium nobile*, which possesses a hard reddish wood. *Fanidy* or *Hidina* is a spiny hard-wooded tree. It is the *Chaetacme madagascariensis*. *Vàlanirana* and *Lambinana*, species of *Nuxia*, also yield timber much employed by the natives. *Hètatra* is a very valuable whitish wood similar to deal; it is the *Podocarpus madagascariensis*. Many other trees yielding timber more or less valuable might be mentioned, but an exhaustive list would occupy too much space in the present paper.

Among other products of the eastern forest is india-rubber. This is obtained from a species, or probably two or three species, of *Landolphia*, lianas found abundantly in certain parts of the forest. The Malagasy obtain the rubber by cutting the stem into short lengths, crushing it, and collecting the juice into vessels. A little acid and water is added, and then it is made into balls and taken for sale. One of the tricks of the trade practised by the natives is to put a stone into the centre of the balls occasionally, so that the buyers have to be careful they do not pay for cobbles.

Various barks, some of known, some of unknown, value are to be found in the forest. There is, for instance, the bark of the *Nàto*, so largely used by the natives as a red dye. Other barks they use in the manufacture of rum, especially that of the tree known as *Fatray* (*Uro-*

*phyllum Lyallii*?). Another bark has a taste similar to cinnamon, and a fourth is as bitter as quinine. This last is probably the *Havbromangidy* (*Ravensara aromatica*).

One or two climbing plants yield Cubebs pepper, and are used by the natives as a medicine. These are *Piper borbonense* and *P. pachyphyllum*.

There are also various gums and resins known as *Ràmy*. These are the produce of various trees, but chiefly those belonging to the genus *Symphonia*. The quality of these gums and resins is, I believe, as yet quite unknown.

Frequently in travelling in the forest one may see fixed in the top of a tree a large rude box, or rather a portion of a tree trunk hollowed out. These are bee-hives, and the owner of the box, with comparatively little trouble, obtains in this way a large quantity of honey. It is made by the small bee (*Apis unicolor*) so common in the forests. The honey is not equal to English honey in quality, though it is not very much inferior. A whole hive full may be had for a mere trifle. The wax is kept and sold to traders.

Several edible forest yams, known as *Ovinàla*, with large tubers are eaten by the natives. They belong to various species of climbing plants (*Dioscorea*). One may frequently see a large hole several feet deep at the foot of a tree, where the natives have dug out one of these immense tubers. In taste they are somewhat similar to the "Taro," or *Saonjo* of the Malagasy.

To know something of the products of the forest, at any rate such products as are employed by the natives, one must examine a Malagasy hut in the neighbourhood. The walls are probably built of bamboo beaten out flat (or occasionally of long flattened Pandanus leaves), the floor being of the same material; the roof not unlikely consists of the large banana-like leaves of the Traveller's tree overlapping one another; the whole being fixed to a framework of round poles and fastened together with the stem of some tough climbing plant. The very water-pot is not a pot at all, but a long bamboo five or six feet in length and four or five inches in diameter, with all the partitions except the bottom one knocked out. In a corner of the hut may probably be seen a quantity of honey in a portion of a tree trunk hollowed out. The mortar in which the rice is pounded is also part of a trunk similarly hollowed out. Hanging from the roof is the anchor-shaped *Màhatia*, part of a small forked branch of a tree, an inch or two in thickness, with the side branches cut off to within three or four inches of the stem at the end, and hung so that the prongs point upwards. This is used instead of pegs on which to hang various articles. Perhaps the good lady of the house is engaged in threading large seeds (those of the *Tànanànampòtsy*, the Physic nut, *Jatropha Curcas*, containing much oil) on a stiff stem of grass. When the night comes on, one end of this is lit, and it takes the place of a candle. The good lady's snuff-box even (for tastes and fashions are not the same all the world round) is the fruit of the *Rofia* palm, or a beautifully polished piece of bamboo; and the thread with which her dress is sewn together is not improbably a vegetable fibre, if indeed the very dress itself is not the pounded and flattened bark of a tree. It may be (and in all this I speak from what I have seen) that she has anointed her hair, not with lard, the common un-

guent, but with the oil from a forest fruit, and not only her hair, but her face, neck and shoulders as well. She takes also an occasional beverage called *Haràfa*, a kind of toddy, obtained from some palm tree, which is said to be "very refreshing." And so the house, the furniture, the garments, the food, the drink, the light, and even the cosmetics are mostly forest products.

*Superstitions.* It is not at all surprising that the forest should be regarded by the superstitious natives with a certain amount of dread. It is so dense, so dark, so uncanny, so mysterious and bewildering, that it requires a certain amount of nerve on their part to travel in it alone; hence the Malagasy proverb says: "Two of us entering the forest: you must trust in me, and I'll trust in you." Nor is it surprising that their childish imagination, uncurbed by reason, should people the forest with strange mythical monsters. Of these the *Songomby* is perhaps the best known and most widely believed in. It is said to be a nocturnal animal about the size of a horse, able to run with great speed, and to live in caves. I was told on one occasion that in order to secure a *Songomby* one must get a child, put it in a pot with holes in, so that it may be able to breathe freely, put the cover on, and place it near a trap made at the mouth of the *Songomby's* den. When the child cries, the *Songomby* will come out to devour it, but as the child is in a covered pot, the monster cannot harm it, and in its attempt to get at it the beast is entrapped and secured. It is to the present day a very common mode of terrifying children into good behaviour to say to them: "*Ho lanin' ny songomby hianao*" (The *songomby* will devour you). There are those among the natives who affirm that they have seen the animal and who actually believe they have, not being aware that what they saw was the creature of their own fear.

Another fabulous animal is the *Tókandia*. It is somewhat smaller than the *Songomby*, and although it only possesses one leg in front and one behind, it is said to be much more fleet of foot than any other animal, overtaking even the swiftest with ease. It is reported to be a man-eater, roaming about at night in search of food.

The *Roàtry* is another mythical creature which, I believe, is supposed to inhabit the forest. It is said to be like a long-mouthed ox with the tail of a donkey.

There are also the *Kàlanôro*, or wild men of the woods, of which Mr. G. Herbert Smith in *ANNUAL* x. p. 242, gives an account. He says they are "represented as very short of stature, covered with hair, with flowing beard in the case of the male, and with an amiable weakness for the warmth of a fire. An eye-witness relates that once, when spending a night in the heart of the forest, he lay awake watching the fire, which had died down to red embers, when suddenly he became aware of a figure answering to the above description warming himself at the fire, and apparently enjoying it immensely. According to his story he put a summary end to the gentleman's enjoyment by stealing down his hand, grasping a stick, and sending a shower of red-hot embers on to his unclothed visitor, who immediately, and most naturally, fled with a shriek. Another tells how, on a similar occasion, the male appeared first, and after inspecting the premises and finding, as well as a fire, some rice left in the pot, summoned his better half; the pair

squatted in front of the fire and—touching picture of conjugal affection—proceeded to feed one another!

“One must confess that the creature described looks suspiciously like one of the larger sorts of lemur; but in a village near Mahanoro, and on the verge of the forest, the inhabitants say they very frequently see these wild people come foraging in their houses for remnants of food, and may be heard calling to one another in the streets.”

Mr. Ransome in his paper on *The River Antanambalana* in the present number of the ANNUAL speaks of wild men of the woods having been found in the forest in the north-east of the island.

Superstitious notions in regard to various forest animals, not fabulous, are also held by the Malagasy. The lemur known as *Hainandro*, a nocturnal animal, is said to be king of the lemurs, and all the other species are subject to it and supply it with food. To the *Bàbakòto* (*Lichanotus brevicaudatus*) the natives attribute remarkable sagacity, for when wounded, these creatures, I have been told, gather a handful of leaves, which they chew and apply to the wound. In some parts of the country the natives venerate this animal and are unwilling either to shoot or entrap it because, they say, it is the progenitor of man! There are of course various versions of these stories. In Cassell's *Natural History* it is stated that “the natives consider the *Babakoto* sacred, and believe that the trees on which they live yield leaves which will cure all diseases. Moreover, they tell some astonishing stories about these objects of their veneration. They say that it is dangerous to cast a spear at one of them, for, if it misses its mark, the animal returns the weapon with a surer aim! They also assert that after a little one is born, the mother throws it to the father, who is usually up a tree close by, and he throws it back again! This exercise is repeated several times; and if the young one is invariably caught, it is reared with care, but if it tumbles, there is an end of it.” (Vol. 1. p. 223)

The Aye-aye is held in special dread, and various notions are held in regard to it. On one occasion I was told by some Sihànaka, who evidently believed it, that when a person sleeps in the forest, the Aye-aye occasionally brings a pillow for him; if a pillow for the head, the person will become rich; if for the feet, he will be bewitched.

Then there is the *Ramilahèloka*, a small kind of chameleon. Of this creature the natives assert that any one stepping on it accidentally or otherwise, or seizing it, will be taken ill, but that the illness need not be fatal, as it may be charmed away by a native doctor.

Such are some of the objects of interest in the great eastern forest of Madagascar and some of the superstitious stories connected with a few of its real or supposed inhabitants. The subject, however, is endless, but the space at my disposal is limited.

In conclusion let me express a hope that the present wholesale destruction of the forest by the natives may be soon effectually stopped by the Government, and that its valuable resources may be speedily utilized. If this does not take place, in a few more generations there will be no forest left to expatiate upon, and as the majority of its trees are found nowhere else in all the world, they will have become absolutely extinct.

R. BARON. (ED.)

## A CHAPTER ON ANTSIHANAKA, ITS PEOPLE AND SUPERSTITIONS.

FROM the missionary's point of view Antsihanaka is a very interesting province because of the evangelistic work among the heathen which is being carried on and is still urgently needed. The ordinary traveller, however, would probably describe it as a decidedly uninviting land, from its bare, rugged, and generally monotonous appearance.

There is Lake Alaotra (24 by 4 miles) and some picturesque spots to remind one that Antsihanaka is a tropical country, with mango groves, banana, orange and lemon trees, rice-fields, and sugar-cane plantations; while to the south and north-east the forest adds a welcome change to the scenery. In the rainy season there is also some good pasturage for cattle, which form one of the chief sources of wealth. Yet the main portion of the country is certainly monotonous. A broad expanse of fen-land spread over most of the plain, 35 miles long, where sedges, and many other marsh plants grow abundantly, with the surrounding hills covered with coarse grass, afford but partial relief to the impression that the great plain of Antsihanaka is decidedly unattractive, at least to the ordinary traveller.

The highest hills are Ikàroka, Ambòhibòrona, Ankitsika, and Ambàravàmbàto; the rivers are small, the chief being the Sàhabè, flowing west into Lake Alaotra, the Andrànòfòtsy, to the south-east of Màngantàny, and the Andròmba, at the north-east of the lake. Most of the rivers, with the lake, and many parts of the marshes are infested with crocodiles, thus rendering a trip in one of the small and shabby canoes an affair of some anxiety, especially should the canoe be overcrowded and under the guidance of a novice in the art of paddling.

The inhabitants of this province are called Sihanaka, and have probably originated in a mixture of the Hòva and Bèzànozàno tribes. Many Bètsimisàraka, Sàkalàva, and Mozambiques are also found among the inhabitants. The Sihanaka are a fairly peaceable and easy-going people, who would far prefer, had they the choice, being left to their own lazy mode of life than attend military drill or go forth in defence of their borders from the hostile Sakalava. With a good herd of cattle, sufficient rice for the season, plenty of rum, a very primitive house built chiefly of bamboo and *Zondro* (a sedge) from the adjoining marsh (plus a few extras), and many of my Sihanaka friends would doubtless be perfectly willing to let the fighting and the civilisation, with the "praying" also, all go gently to rest.

The first time I remember meeting with a Sihanaka was in 1887, when leaving Antànanarivo for Ambàtondràzàka, the Capital of the Antsihanaka province. About 100 natives had arrived to carry my baggage and that of my friend Mr. Mackay, our medical missionary. And certainly I never saw a more heathen-looking set of men—many of them of fine physique, and much darker than the Hova tribe—but so degraded and almost forbidding in appearance. They were slaves, who of course form the most wretched portion of the tribe. Poor fellows, I thought, if it be to such as you I am sent to preach the Gospel, there is



surely no time to be lost. Thus I mused at the time, and my impression was only been confirmed during the past four years, that the lot of the Malagasy slave is unspeakably sad; while to be the means of rendering their life less wretched by extending the Gospel of "peace among men" is surely worthy of any sacrifice we can make.

And yet how apparently forgetful of care were many of those Sihanaka bearers as I saw them that morning at the Capital, 100 miles away from their home of bondage, even to the passing jokes upon their companions. One jest I remember was suggested by the name of one of their number. And curious names many of them had, to wit, Mr. Never-sweep, Mr. Want-Nothing, and Mr. Never-Thirsty. On going over the list of the baggage carriers before giving the money on account of wages, I called out the name of the man Never-Thirsty, and receiving no reply, I asked: "Where is Never-Thirsty?" Whereupon a companion of the young man answered in a droll voice: "Where's Never-Thirsty? Why, he's having a *drink*!"

Since Mr. Sibree's pamphlet *To Antsihanaka and Back* in 1874, I remember no other Itinerary of the journey from Antananarivo to Ambatondrazaka having been published, and therefore I here add the Itinerary of my journey which may prove of use to future travellers:—

	<i>hrs. m.</i>
{ Antananarivo to Ankórondehibé .....	3. 00
{ Ankorondehibe to Ambatomainity* .....	3. 30
{ Ambatomainity to Antantamokely .....	2. 30
{ Antantamokely to Anjozorobé .....	4. 15
{ Anjozorobe to Antanifotsy .....	3. 30
{ Antanifotsy no Mandanivatsy (including 2 hours' ride in forest) .....	4. 00
{ Mandanivatsy to Antanimenakely .....	3. 15
{ Antanimenakely to Andranofotsy .....	4. 30
{ Andranofotsy to Andilamariana .....	4. 50
{ Andilamariana to Ambatondrazaka .....	1. 45

Ambatondrazaka is rather a large town for Antsihanaka, containing about 400 houses, and is built on the edge of the extensive marsh above referred to. The houses, of one or two rooms each, are chiefly formed with a rough frame-work of strong poles, the walls being of the *Zozoro* (a sedge), and roofed with *Hérana* (another kind of sedge) which abound in the neighbourhood. The larger buildings which (excepting the church) are built of sun-dried bricks, are the governor's new residence, the mission house and spacious school-room erected by Rev. J. Pearse, besides a dozen private houses. Ambatondrazaka is in command of a governor and staff of military officers from the central government in Imerina, and with the surrounding twenty villages, contains a population of about 4000. Various traders' shops or stalls are to be found of a very primitive kind, where can be obtained rice, native sugar, fruit, beef, fowls, and clothing in the shape of foreign print and calico dresses, coats and shirts, native straw hats from Antananarivo, English umbrellas and parasols, crockery, and last but not least Bryant and May's patent safety matches. The town is decidedly dirty, and were it not for the pigs, which act as general scavengers, disease might prove far more prevalent than it is at present.

\* Ambatomainity should be reached the first day if possible.

Adjoining our house a little way out of the town is the Saturday market which, as usual in Madagascar, is held in the open air. Some of the more important traders have erected stalls consisting of six small poles with thatched roofs; others use a very big umbrella made of *Rofia*, and with extra long handle, which the trader sticks in the mound of which his goods are arranged, and under the shade of his umbrella a little security from the heat, if not from the cold winds. In case of heavy rains, the market, but especially the traders, prefer to appear. Fortunately there seems to be little fear among them of influenza or rheumatism, and should their shawl or shirt be thoroughly wet through, they most patiently wait until time to use a towel, or to hurry home for a change of clothes. In special circumstances, appear not to occur to our natives. At this market a large concourse of people meet from various tribes, offering a favourable opportunity for missionary effort. Every Sabbath we hold a service in our preaching-stall built in the middle of the market-place; this service is conducted somewhat after the manner of our open-air services in England, and the harmonium, at any rate, never fails to secure a hearing.

The climate of Antsihanaka is extremely variable; sudden changes from heat to cold and mist, with chilling winds, occur with remarkable frequency, and may probably account for many cases of malarial fever, pneumonia, etc. It is not only the climate, however, nor the miasma arising from the marsh that are to blame for the notoriety this province has unfortunately obtained for fever; there are various other causes, and nearly all preventible, which may be mentioned. For instance, the far too scanty clothing worn by many of the people even in mid-winter, when we prepare for the fierce east winds, which are often accompanied by a veritable Scotch mist; and also the unsuitable positions in which many of the villages are built—not on the slope of some healthy hill, but on the edge, or even in the middle, of a marsh. It appears to me that although, owing to the variable climate and the large area of marsh land, Antsihanaka, taken as a whole, is unhealthy, yet the province contains in common with other parts of the interior some of the most healthy spots one might desire. I may mention the ridge of Imèrimandrôso, which commands a good view of the lake to the west, and offers a capital site for building.

The Sihanaka are very superstitious, and hold a decided belief in the continued existence of the soul after death. The *àngatra*, or spirit, after separation from the body, is supposed to wander about seeking rest, though, as a rule, it remains in or near the grave.

In every part of the country may be found what are called *fôtoira* or *jiro*, which are high poles (from 30 to 50 ft. high), placed mostly near the graves at the entrance to the village, or by the way-side. At the base of these poles are sometimes placed the bedstead, matting, and other personal effects belonging to the deceased; while suspended above may be seen the umbrella, hat, mug, concertina, etc.; near to the top of the pole a small looking-glass is often let in, apparently for the benefit of the wandering spirit, who may still wish to examine himself in the glass. Other effects of the deceased are buried with the body in the grave, or placed above it: a plate, for he will still require food; a gun, for he will still wish to shoot; and plenty of rum, for he will still desire an occasional "spree"!

Among their ancestors held in special veneration by the Sihanaka is a woman named Rasoavitsy, of whom there exists the following strange tradition. In former times, when tribal wars were common, the Betsimisaraka tribe on the east frequently came up to fight with the Sihanaka. Shortly after one of these tribal wars it happened that Rasoavitsy became very ill, and when expecting death, gave the following directions for her burial. "When I am dead, bury me on the borders of the forest, and place my feet towards the east, for I will kick those Betsimisaraka when they come up to fight us, and thus shall they be overcome and fight with us no more." At the death of this woman, the instructions given as to her burial were strictly followed, the feet being placed towards the east from which the Betsimisaraka would approach. And the tradition affirms that from that time they have not returned to fight the Sihanaka. The grave of this renowned woman is to the west of Antëndrirano, and there the Sihanaka occasionally present a white-headed ox, a bottle of rum, or a dollar, to the spirit of Rasoavitsy; for to her they appeal when in need of any special blessing, firmly believing in her power to grant their requests or to aid them when in distress.

The belief in divination (*sikidy*) and fate (*vintana*) is universal, but from fear of the Government, these heathen practices are followed in secret. No Sihanaka would now acknowledge himself to be a diviner (*mpânazary*), or that he possesses charms; yet it is at least quite an open secret that the majority, even many who attend the churches, are still most devoted to these heathen customs. It will need a higher influence than the word of man, especially when unaccompanied by a holy life, to uproot these superstitions, which have been in existence for ages.

The drinking of rum to a frightful extent is almost universally prevalent among the Sihanaka. The spirit is made from the sugarcane, and is distilled in almost every village and drunk pure. It is noticeable that the rum distilleries of Antsihanaka are mostly the shabbiest huts in the village, as if the people had some instinctive idea of the unworthy character of the trade. Notwithstanding some efforts made during the last three years to overcome this evil, intemperance still holds a very ominous sway over the people, whether Sihanaka, Hova, or Mozambiques.

Among the places I have visited none perhaps are more interesting, as retaining the old heathen customs, than Anôsimboahangy and Anorôro. The former is also called Anôsin-drano, and is three days' journey to the north of Ambatondrazaka. It is situated in a swamp and is approached by canoes along a stream which, for three or four miles, winds about among the thick rushes. On my visits to this village I have been struck with the ignorance of the people, more especially with that of the adults. United with Anosimboahangy are two other villages, Anôsinandriana and Amisôro, containing a total population of about 2,500. There is here a mixture of Sakalava and Sihanaka, and a more energetic lot of people it would be impossible to find in the province. The Gospel has been preached at Anosimboahangy for several years by Rahaingo and his companions; and as a result of educational work, many of the younger people are no longer really heathen. But from various causes the state of the village is very far from satisfactory, and only a firm faith in the renewing power of God's Word can cheer us as we anticipate the future of these Sihanaka.

tsakalava. A strange sight truly are these three heathen villages on the northern border of Antsihanaka, still immersed in superstition and idolatry, yet outwardly professing to be adherents of "the praying."

Close to the church are several of the poles (*folotra*) erected to the memory of the dead, at the base of which the people formerly offered the usual sacrifices to their ancestors. Being, however, rather too close to the church, the practice has been discontinued in that immediate locality. A little way off, however, they fail not to propitiate or to seek blessings from their ancestors. An old man relates that beneath the poles near the church there still remain buried some potatoes, and also a calf, neither of which have yet seen the sun (*masôva*), also some addled eggs placed there by the diviners of a former time. Should the town be conquered, so prophesied the ancestors, the buried calf will arise and bellow, and the potatoes will begin to grow, amid the crowing of the cocks, which will at once emerge in full strength from the addled eggs. When asked whether that prophecy had been fulfilled at the time the Hova conqueror Radama I. arrived in Antsihanaka, the old man replied:—"No, nothing appeared at that time, but the reason was because the Hova were too strong for them!"

Business flourishes to some extent at these places, and some traders from Imérina have found to their profit that the teaching of the evangelist has, at any rate, done some good by awakening a desire on the part of the natives to obtain more and better clothing than formerly. It is encouraging to add that even at Anosimboahangy a few have been turned from gross heathen darkness to Him Who is "the Light of the World."

Anororo, the other village mentioned, is inhabited by Sihanaka only, and is found in the midst of a large swamp near to the south-west of Lake Alaotra. The inhabitants came originally from Ambôhitrarivo, attracted to the present site by the number of water-fowl and fish (*fôny*), and also by the abundance of *kiroro*, a rush used in making baskets. From the *kiroro* the name of the place originated, being called at first Kororo, and subsequently was changed to its present name, Anororo. The *kiroro* near Anororo has been gradually destroyed, chiefly by the cattle, but is still found at some distance to the north of the town.

Andrianônibêlaza, who founded Anororo, was the nephew of a celebrated Sihanaka diviner, whose body is said to be still undecayed, although buried many years ago. This Andrianonibelaza, with his father, also a heathen prophet, have obtained renown by some wonderful powers of enchantment. On one occasion Andrianonibelaza and his father planted rice over the marshy flats west of the lake, and fenced it in with a single line of rushes; the fence enclosing the rice was called *dôka*, and owing to the powers exerted by the two diviners, the waters of Alaotra are unable to advance beyond the boundary marked formerly by the fence, even when swollen by the heaviest rains. The same ancestor is said to have fetched an ox, and after cutting off its head, threw it into the river Anôny to the north of Antsihanaka; thereupon the headless beast went about like a living one, bellowing and swimming up and down the river. The following, however, is the most wonderful feat performed by Andrianonibelaza, and surely, if only true, surpassing the engineering feat of the Forth Bridge. One day this Sihanaka diviner obtained two stalks of the *sosoro* sedge (about 8 ft. long

by  $2\frac{1}{2}$  inches in diameter), one of which he stuck on the west side of the lake and the other on the opposite shore; he thereupon connected the two stalks with a single thread of *Rofia*, and on it was able to cross the lake ( $3\frac{1}{2}$  miles wide) as easily as on a good bridge. Blessings are still sought by many of the Sihanaka from this wonderful magician and Andriantolàza his father, and sacrifices of oxen and rum are occasionally offered at their graves to the west of the lake.

Being built in the middle of a swamp, Anororo is literally flooded during the rainy season. In March of 1889, the waters rose at least three feet within the houses. On these occasions it is the custom of the people to make a raft, which rises or falls with the water; on this they live until the rains are over and they are able to return to the ground-floor.

The Sihanaka of Anororo are renowned among their neighbours for their superstitions, notwithstanding the encouraging progress made in the mission-school. Especially are they noted for their belief in astrology and the observance of lucky and unlucky days. I once visited Anororo on one of their so-called unlucky days, and although I experienced no special inconvenience, being safely housed in the school teacher's house, the palanquin carriers had a sorry time of it, no Anororo householder being allowed to entertain strangers at such times. Some of my men had actually to sleep out in the open air, not a house being available for them on that day throughout the whole of Anororo.

The Anororo calendar of unlucky days for the year 1890 opened with Sunday the 9th of February. From that day five days were reckoned lucky, but the following Saturday was also unlucky. They then appointed two lucky days, and February the 18th (Tuesday) was unlucky. Another two days were lucky, but February the 21st (Friday) was again unlucky. The astrologer then repeats his plan, and counts five good days from February the 21st, the following day being again pronounced decidedly unlucky; and so on to the end of the year. The unlucky days of December were the 3rd, 6th, 12th, 15th, 18th, 24th, 27th, and 30th. Christmas and Boxing days are thus allowed to be lucky; it cannot be that the heathen diviner of Anororo had any presentiment of the joys anticipated by so many on those two days, although Christmas-day is already known in Antsihanaka.

After receiving the calendar, I referred, out of curiosity, to my diary, and found that Good Friday was the date of my intended visit to Anororo, and that happened to be an unlucky day. However, on the appointed day (Good Friday, April 4th) I left the neighbouring village of Ambôhijànahàry, and proceeded along the wide plain towards Anororo. The rainy season not being over, much water still remained in the great swamp in front of the village, and my men, not being quite sure of the way, carried me into the middle of the almost trackless marsh; there for over an hour they wandered hither and thither striving to find the track for Anororo. I was desirous not to be defeated, as the day being reckoned unlucky, the people might exult and perhaps vainly imagine some connection between their unlucky Friday and my failure to reach the place. For the first time, however, during my travels, I was really compelled to give up the hope of reaching my destination, for that day at least; and the waters now reaching the chests of the tallest bearers, and signs being ominous that crocodiles were not far off

I very unwillingly gave word to turn back to Ambohijanahary. Not to be really defeated, I made a second attempt on the following day, and succeeded in reaching the village, although in some parts of the swamp the men had much difficulty in keeping their heads above water. As I entered Anororo I almost fancied I could see the smile on the faces of the people, who were, however, far too polite to twit me with my failure the day before. I learned afterwards that they really complimented me by remarking: "That missionary must really be *Isàra vintana* (of good fate), or he could never have wandered through those deep swamps without being devoured by the crocodiles."

At Ivòhitsòà, on the eastern shore of Lake Alaotra, where I spent a pleasant month last January, a somewhat exciting adventure took place, with which I will close my paper. On that occasion a man, who was washing some clothes for me, had a very narrow escape from the jaws of one of the crocodiles which infest the lake. The man being rather blind of one eye, and being busily engaged in beating the clothes on a stone close to the water, he failed to notice the stealthy approach of the monster. The attack was begun, as in a moment, by a quantity of water being dashed over the man by the crocodile's tail, an immediate precursor of destruction. Very fortunately, however, my man knew the fatal sign, and staring at the reptile with both eyes, he described himself as very nearly lost through a sudden feeling of faintness coming over him. However, off the fellow rushed for his life, only in the nick of time, for another second and he must have been carried off by the crocodile. A strong-minded, if not revengeful, man he was, for when sitting over the pork supper I gave him and his friends in commemoration of his narrow escape from death, he made a vow that if ever the chance occurred, he would help to kill the next crocodile he came across. And quite unexpectedly the opportunity arrived. About a week after his escape, the same crocodile, according to native account, had attacked some cattle belonging to a local dealer, who determined to make an attack upon the ravenous reptile. Hearing of this, my man, in accordance with his vow, at once volunteered to assist. Armed with numerous spears, they started in canoes, and tracking the crocodile some distance from shore, came up with him; and amid the flying of spears, the shouting of the hunters, and the desperate splashing of the wounded reptile striving to escape, we gradually discovered that the fight was at an end, and ere long saw the crocodile dragged to shore floating on his back. For several days the carcass was visited by natives, who came not only to look at it, but also to carry off portions of the fat obtained in large quantities. I managed to secure his jaws as a curiosity, not, however, before several of the teeth had been drawn by the natives, who regard them as a valuable charm.

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I here add some words in various dialects of the Malagasy language, including the Sihanaka, together with their Hova equivalents:—

## Hova

- Adàlo=Fòsa (Bez., Betsim., and Sak.), Afòsa (Sih.).  
 Afovato=Afonkapaika (Sih.).  
 Akòtry=Vàrihòfoka (Betsim.).  
 Alàhamàdy=Fiàhiana (Bez., Betsim., Sih., and Sak.).  
 Alahòtsy=Vòlamàka (Bez., Betsim., Sih., and Sak.).  
 Ampentàny=Vàlahàdy (Betsim.), Hādimbòly (Sih.).  
 Ampy=Fanaoka (Betsim.), Tandriky (Sak.).  
 Andrao=Sandròà (Betsim.), Sòazàho (Sak.).  
 Andro àny=Ny àny (Bez., Betsim., and Sih.).  
 Aròsy=Rahàka (Betsim.), Ntsivòngo (Sak.).  
 Fandioràno=Vòanaràno (Betsim.).  
 Fanòto=Fadisa (Sak.).  
 Fiàvotra=Fanatsiana (Betsim.).  
 Fòfy=Fisàvika (Betsim.), Fisilaka (Sih.), Fanity (Sak.).  
 Hala=Vòankòhy (Betsim., and Sih.), Maingoka (Sak.).  
 Hèty=Fizòna (Betsim.), Fihèty (Sih.).  
 Hòho=Angòfo (Sih.).  
 Kifàfa=Famàfa (Betsim.).  
 Kònka=Himpahimpa (Betsim.), Ròngarònga (Sih.).  
 Mafy=Matòy (Sih.).  
 Malèmy fanàhy=Kànty (Betsim.).  
 Mānakāmbana=Miāmana (Betsim.), Manāmbana (Sih., and Sak.).  
 Miàlona=Miràfy (Betsim.), Mifāmpihèloka (Sih., and Sak.).  
 Miandràndra=Miānga (Betsim., and Sih.), Mijòna (Sak.).  
 Miankòhoka=Mihòhoka (Sih.).  
 Miāsa=Manoraka (Betsim., and Sih.), Mitsàbo (Sak.).  
 Mindrana òlona=Manatòro òlona (Sih.).  
 Misòtro=Mingàka (Sak.).  
 Mitàdy=Miārana (Betsim.), Mikāraka (Sih.).  
 Mitèny=Mizàka (Betsim.), Mimàlo (Sak.).  
 Nèny=Niny (Betsim., and Sih.), Jàry (Sak.).  
 Ondrindràno=Mòramiòfo (Betsim.), Antibàvimiantòetra (Sak.).  
 Pàtsa=Tsiyakina (Sak.).  
 Sahàfa=Lontsèry (Sak.).  
 Sàrotra=Masiaka (Betsim.), Mafòaka (Sih.), Famòatra (Sak.).  
 Sòtrobè=Sòtrokàna (Bez.), Ondraka (Betsim., and Sih.), Sòndro (Sak.).  
 Totòzy=Atity (Betsim.).  
 Tsindrètra=Tsingihitra (Sih.).  
 Vāno=Vaona (Sih.).  
 Vèhivàvy=Manāngy (Sak.).  
 Zaodàhy=Vādilàhy (Sih.).  
 Zàvatra=Mitèlika (Sih.).  
 Zàzalàhy=Zàzalèhilàhy (Sih.).

(Bez.=Bezazano; Betsim.=Betsimisaraka; Sih.=Sihanaka; Sak.=Sakalava.)

E. H. STRIBLING.



## EXTRACTS FROM THE JOURNAL OF DR. RUTENBERG.

(Translated from the German by Mr. Scott Elliot, M.A.)

RUTENBERG started on Sept. 27, 1877, from Port Louis for Vòhimàrina. The journey by sailing ship was very wearisome. At first they were delayed by a calm which lasted two days, then suddenly, as they reached Ngòntsy a strong north-easter sprang up, and they found the entrance into the small rocky bay of Vohimarina rather dangerous. As they passed along the coast, the country appeared to consist of small rolling hills, while in the distance sharply cut peaks of about 1000 metres in height were to be seen. There appeared to be little wood on the hills, but the undergrowth was very thick and reached down to the water's edge. At times there appeared wide stretches of red sand. Thick clouds of smoke showed that the African custom prevailed of burning the old grass in order to produce fresh green pasture for the cattle in spring.

Immediately the ship entered the bay and the French flag was hoisted, a flag appeared on the house of the Hova governor, who then turned out in a canoe to take the papers. The governor, like all the Hova, appeared to belong to the true Malayan type, with long, black, straight hair, prominent cheek bones, yellow skin and horizontal eyebrows. ....

In a walk along the coast through the thick bush, our traveller found several new or interesting plants, notably *Casuarina equisetifolia*, so common in Mauritius, numbers of shells, and numerous brightly coloured birds. ....

The governor of this district, Ankàrana, lived at Amboniho, and Rutenberg went there the next morning (Oct. 5). The road led at first southerly along the coast, first through a small wood, then partly over grass and partly over sand hills to the river Màmambèro (3 hours). After crossing this, it turned more towards the interior. The canoes in this part are protected from an upset and from crocodiles by two logs fixed at about two metres distance from the sides. In the marshes along the coast some extraordinary animals made their appearance, while some beautiful specimes of *Sagittaria* roused his German patriotism.

Amboniho lies on a hill overgrown with bushes, is surrounded by palisades, and has guns placed at each of the four corners. The palisades, however, are more or less rotten, and the venerable age of the cannons shows their proper position to be rather in some museum than in a wooden fortress. The houses stand in regular rows within the fortress. They are formed of the stem and leaves of the *Ravenala* (Traveller's tree) and contain usually a dwelling and sleeping-room, the former much blackened by smoke. The house of the governor was surrounded also by a palisade, which, having reached the respectable age of 30 years, was somewhat defective. Before it there is the trunk of a tree on which all who wish to speak to his Excellency must sit till their names are announced and various toilet operations gone through inside.



The governor proved friendly and offered him two soldiers as escort.

Near this place Rutenberg found Gum trees (India rubber probably referred to here) and cocoanut trees, and also the poisonous *Tangèna*. To purify the gum much sulphuric acid is used.

On the 6th October he returned to Vohimarina. On the 7th at 6 A.M. he started. The road lay at first towards Ambòina through a lake (Màsa), then passes over green meadowland to the little village (7 hours) of Masambodzin\* lying at the foot of the small hill of Ambohi Pas (Ambòhi-pàsy?), from the summit of which there is a beautiful view beyond. Another 1½ hours further there is a larger village, Mehralak (Mènalàka?) surrounded with *Ravenala* and bananas, also an aloe-like plant.

Next morning he started in a north-west direction, following a valley surrounded by small hills. Masses of blinding white stone, beautifully transparent rock crystal, snow white quartz, often like the marble stones in a churchyard, were seen by the way. Red sand-reaches alternated with meadows and marshes, which exhaled a pestilential odour, and reminded the bold traveller of the dangers of Madagascar fever. Red orchids and blue *Nymphæas* were to be seen everywhere. Finally he reached Ambànimanàry and Manàkobàto (3 hours). The road next morning led over a broad shallow river, the Màmambàto, then through deep white sand in a westerly direction, finally up a very steep mountain. The strength of the water in the rainy season must be extraordinary. A number of trees at a distance from the stream had (during summer) been rooted out and killed by it. He now entered the valley of Tschampana, which is girdled by trees, and consists of yellowish-green meadows. Its direction is N.N.W. From a steep hill top one sees a mass of forest-clad mountains scarcely seeming to possess any distinct trend. He reached a village, Kamateh, at midday (6 hours), and in the evening, after crossing a marsh, the high lying village of Tschahabe (Iàhabè?).

On the next day's journey he began to meet with the *Rofia* palm; one specimen measured 6½ metres in circumference above the root! Pieces of this were in great request as charms to keep off evil spirits.

The road then winds along hilly ground to the south of much larger mountains to Andumakumba (Andònakòmby). The inhabitants are remarkably clever at dressing their hair. Even a French hairdresser would be surprised (*sic*). The women and men part their hair both lengthwise and across. They then plait it into 30 to 50 locks 6 to 7 centimetres long. In mourning these locks are unplaited. Several shallow but rather deep rivers break through, in a north-west direction, the mountain chain which runs approximately east and west. One of these, Màmànjàba, falls into the sea about a day's journey north of Ifàsy. The country alternates between bare hills and wooded hollows. The mountains to the south, Fihèta and Andranàry, seem to be from 9 to 12 centimetres in height. Those to the north seem lower, but are more picturesque through the dark green of the woods (trees not tall) and the broken projecting rocks. He reached Antòà towards night, and the next day, after passing through numerous salt marshes, Ifasy (N.W. Coast).

For half a day he was employed in descending the winding delta of

\* Many of these names it is impossible to recognise. Where they can be identified, they have been corrected in the text.—EDS.

the river Ifasy. At the mouth he was detained a day by the state of the tide, and as the usual wind here is from the south-west, he was obliged to put into another river mouth, (Ambazòana?), to reach the village of Pomponema lying an hour up it. After four days' journey, he reached Nòsibè (which he expatiates upon).

(Reaching Mojanga from Nosibe) he sailed up the river Màrovoay, reaching the fort of the same name on the 30th October. On the 1st November, three quarters of an hour's southerly marching took him to a point where he crossed the river, whose bank is very marshy in this part, and he reached Ambohiani.

Next morning he passed over a wide plain, partly marshy, partly ox-meadows, and covered with small palms and herbaceous plants, and finally traversed a wood. Passing on over dried-up streams and sandy hillocks, he reached Tràbòny, which is surrounded by rice-fields. On the 4th November his route lay south-east across the Kamòry river, reaching at night a small Hova fort on a little eminence. Next day, passing through numerous palms and bamboos, he reached Ambalanjanakòmby. The flora in this neighbourhood is rather poor, consisting chiefly of waterlilies. There are abundant birds and insects of all kinds. Numerous little streams cross the road, which all flow into the Bètsibòka.

He then reached the Manòmbatròmba, a tributary of the Betsiboka, where he slept in an abandoned hut. Two hours next morning brought him to Ambatumansaka (Ambàtomanjaka?). On the top of this hill there is a little cairn erected to the memory of travellers, to which every passer-by is supposed to add a stone.\* The Manombatròmba rises from the base of this hill and flows north-east through a beautiful shaded valley. The country changes here. There are numerous beautiful little valleys with streams winding through them. The incline becomes steeper as one approaches the Namakiana, which is the chief mountain chain in this part. The sandy plains and hillsides are covered with grass, and *Rofia*, *Pandanus*, and Bamboos appear. The route lay south-east, thus crossing numerous parallel chains. The road here is stony and hard. When Namakiana is reached, the view is extensive, the junction of the Betsiboka and Ikòpa being visible. Near by rises the Kamory, while the Sinko rises further east behind a chain of hills. He then reached Antungodrarana (Antòngodrahòja?).

From here he marched to the source of the Kamory lying on a plateau two miles wide. From its eastern edge he noticed a long mountain ridge lying to the north. He had to make a detour to pass the Masamba, and a tree had to be felled even to cross the small river Kèlilàha. That evening he reached the large village of Ampàndrana. The road after this was still more difficult: marshes, streams, and sterile mountain ridges alternated, and finally he rested a day at Ampàrafàravòla (in Antsihànaka). The next day's journey was over swampy ground, on which the men sank up to the knees, and they did not reach Ambòhijànahàry. Finally he reached Lake Alaotra on the 18th of November. (From Alaotra to Antanànarivo and thence to Mojanga is too well known to need translation.)

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\* More probably a heap of stones called by the Malagasy *Fanataovana*, upon which passers-by usually throw a stone or other object for luck in their journey or enterprise.—EDS.

(Starting again from Mojanga), the road lay at first over sandhills to a small village named Miàrinarivo. Here in the flat coast-land the view was at times very beautiful, with scattered bushes and trees, though no proper woods, between which fresh green meadows were to be seen. The villages, however, are far apart and poor (Antanafaffy Marumpa). Small rivers were frequently met with, e.g. the Andràngona, which falls into Bèmbatòka Bay, the Màmamàvomàvo and Andrànolàva, which fall into the sea north of Mojanga, and it is but rarely that a canoe is to be found. Towards the east there are level mountain ranges with steep slopes; marshes with scattered but beautiful flowers appeared here and there, which exhaled miasmatic vapours, which affected the health of the bold traveller. On the 5th of March the great Mähajàmbe river was reached, which he crossed afterwards, having two and a half hours' marching through a salt marsh. Finally passing through high grass, bush and wood, he reached hilly ground at Andrómbe. The next day the same marshes and deep lagoons required a canoe; he then crossed the river Sofia, which is deep on the right bank, but shallow and sandy on the left. The power of the Hova here is very slight; at Sofia the people denied any suzerainty to the Capital. Their king resides on Nòsilàva. They are very suspicious of strangers and refused to give the name of their village. The women wore wooden ornaments the size of a five-franc piece in their ears and pearl bangles on their arms and legs. The men are tattooed. He at last reached Anàlalàva, where he took a ship for Nosibe. The coast here is covered with hills, the outliers of the chief mountain range of the island; numerous large and small islands (Nòsimballha, Nòsisàba, etc.), lying to the west and south. The voyage is also dangerous on account of the numerous reefs. Finally on the 18th March he reached Nosibe.

The information respecting his last journey is derived from Dr. Hildebrandt. He started on the 2nd May, 1878, and proceeding down the coast, landed at Ambòhidràvina, but though well treated by the governor, difficulties were raised against his entering the province of Sambàva on account of the unsettled state of the country. However, he insisted, and on the 4th May, after 2½ hours' march, crossed the easterly ridge of hills and reached Mailaka on the south of Ampàsindàva Bay. From thence passing through mangrove swamps and grass six feet high, he reached the low hills at Ambòdimadiro, and then the broad river and town of Jangòa.\* The governor refusing a guide, without which it was impossible to proceed through the forest, he was obliged to begin to go down the Jangòa and back along the coast to Ambòhidràvina. After two days, however, a man turned up, who offered to point out another road. The steep slope of the hill behind the village was climbed, and then he proceeded along the top through grass and shady forest. Marching along the small Drudra river he reached Andàmpy at midday. He then passed down a slippery path through grass six feet high into a deep valley, and on the top of the opposite side reached the village of Ambàlavitsy. The road lay through a thick wood full of fallen trees, morasses and streams, and then bush, finally

\* When travelling south, Rutenberg must have reached Jangòa first, then Mailaka, and lastly Ambòdimadiro.—EDS.

through swamps full of beaches to a small hut where he slept. Next morning he climbed the Berôno. From there he went to the western foot of Berono to a village, Andrâvahônko, where he slept. Thence over Antsâhabé, Kopani, Ambatulamam (Ambâtomalâma?), to Andrânomalâza on a river of the same name, where a ship from Nosibe was waiting. On the 22nd May, after passing Ambôhitsâra (the whole of the journey so far being on foot), he obtained a palanquin. He crossed the river Komarong, and next morning, passed down the river between mangrove swamps into the broad Ambérolâva, and thence to the village of Ambitsi. The banks are partly wooded, partly rocky, and bordered by small islets. At a point, Duani, on the western side, the coast bends round to the south-west. Finally he landed at Anâlâlâva. He then sailed down the bay to Duani or Anônibé. Next he marched through a marshy plain to the village of Ambôdimadiro in the Antantiluki country. Then he reached Lânga, where he stayed the night. The road then led over a plateau (Angaramundi), from which he could see the forest-clad hills far off. Though suffering from fever he pushed on to the village of Mévasâmba, where he found the people seated round a large barrel of rum, which they were engaged in emptying, accompanied by tomtoms and clapping of hands. (Mevasamba to Ambodimadiro omitted).

At Ambodimadiro he noticed that the soil consisted of two layers, a layer of red loam, then one of blue gravel with numerous quartz veins.\* The mountains show precipices often rising into tower-like summits. The road runs in a very zigzag manner, but as several pages are missing from his notebook, there are no details of this part of his journey. Eventually he reached Mojanga on the 24th July. From Mojanga he started on the 26th July for Bâly. Here the Queen gave him permission to travel through her dominions, but on his stating that he wished to reach the chief king, Tsitohâra, she refused. On the 30th, however, in spite of everyone, he started up the river Andrânomâvo, but was obliged to go slowly: the slippery paths, thick bush, mangroves, and the frequent impediments of rocks and woods delaying him. At Kidrin-drabé he had a strange reception. The general belief was that the white man wished to take the land, and Arab flags with strange figures were displayed to deter him. Thence he went to Behâra, where he engaged men for Manérinérina. His servant here abandoned him. From there he went to Vilarnatse, where the people wear a key as head ornament and pieces of wood as earrings. He here engaged as servant a man from Johanna, because he could speak a little English, in spite of his hand-dog face. With this man and two Sakalava he sailed southward along the coast past Mârotôndro, Amrandru, and the mouth of the Bêmaraâha to Sâropitsâhana, where he heard war had broken out between Maintirâno and Ménabé. Nevertheless he determined to march inland from Berâvy. He reached this village on the 18th, and started on the 20th. The road at first lay over the sand-dunes by the sea to the village of Ambalarana. Thence he went to the river Andrânobé and along one bank to Betôndro. He had to cross the river three times to reach the next town, Benâta, situated

\* In addition to the above, which is a very loose and misleading description of the formation at Ambodimadiro, it may be remarked that a large number of basaltic dykes may be seen in close proximity on the sea-shore adjoining the village. The basalt contains hornblende and is otherwise also of an anomalous character.—EDS.

on hilly ground amongst palms. On the 22nd of August he reached the mountains which have here a peculiar sugar-cone appearance. On the 23rd he again came to the Andranobe, where, as there was no proper village on account of the war, the people were living in dark places in the wood. One of them next morning guided him over the hills, which are thickly covered with bamboo.

Hildebrandt visited the place of the murder and gathered the following details. It took place on the bank of the beautiful stream Māningàra. There is a small flat space beside a waterfall on the stream. Here he lay down to sleep. During his sleep his faithless companions Vārahāsa and Bānankāre attacked him. They stabbed him in the arm and neck and then threw the body into the stream.

The following, from *Reliquiæ Rutenbergianæ*, Part 1, may also be added to the above account:—

7th Oct.—13th Oct., 1877. Journey from Vohimarina to Ifasy (across the northern end of Madagascar).

17th Oct.—23rd Oct. Stay at Helleville in Nosibe. X

23rd Oct., 1877—18th March, 1878. Journey from Helleville by sea to Mojanga, from thence to L. Alaotra and Antananarivo.

8th Dec.—17th Dec., 1878. To L. Itasy and back.

18th March—2nd May, 1878. Stay at Nosibe.

2nd May, 1878—17th (?) July, 1878. Journey by land along the west coast to Mojanga.

26th July, 1878—25th Aug., 1878. Journey from Mojanga to the bank of the river Maningara, where he ended his days.

*Note by Mr. Pickersgill who entertained Dr. Rutenberg at Mojanga and assisted him to obtain porters.*

RUTENBERG had a narrow escape on his journey to Analalava. Most of his men were Makoa, but he took into his service, contrary to my recommendation, a vagabond from Nosibe, and this fellow plotted to murder him. None of the others, however, were willing to go beyond robbery. With the assistance of two of them he stole the traveller's handbag containing some forty or fifty dollars. Part of the money was given to the headman of the nearest Sakalava village to induce him to foil pursuit and the remainder divided. The thieves then separated, the Nosibe man going north and the Makoa south, all homewards. On arriving at one of the many rivers of that region, the two found the ferryman unable to take over more than a single passenger at a time, the canoe being rickety and the river deep and wide. It was agreed that the first to cross should carry the money, and just as the canoe was putting off, the other man threw in his garments, having decided to take a bath. That was the last he saw of either the clothes or the ill-gotten dollars, his friend and fellow-rascal bolted with everything.

The sequel is not uninteresting. The beggared Makoa hired himself to a Sakalava and worked at rum-making until he had earned the cost of a new suit, worn in the meantime, of course, on credit. Then he made his way back to Mojanga, arriving about the same time as the faithful ones from Analalava, who having done their duty and received their wages according to contract, thought it no sin to go in for hush-money. But they failed to profit by their knowledge, and then became strictly honest and exposed the robbery. Calling in the aid of the Hova authorities, I delivered the culprits to rough-and-ready justice, which ordained that they should clank about the town in chains until they repaid their share of the plunder. Subsequently I

had the pleasure of handing the cash over to Dr. Hildebrandt, and also of giving evidence against the other thief before a French magistrate in Nosibe. Justice was done there too, but much after the European fashion, that is to say, with little satisfaction to the robbed complainant.

Dr Hildebrandt was a much more accomplished traveller than his compatriot and predecessor Rutenberg. But the accounts which such observers give of a country like Madagascar are not always to be trusted. The scientific mind can see well enough, but is not so efficient as a listener. At the time Hildebrandt reached Antananarivo after his journey from Nosibe and the north-west coast, Mr. Parrett was about to visit Ambàvatòby (Dalrymple Bay) on business of the Malagasy Government, and I had agreed to go with him. "You had better keep your commission dark," advised the German, "for if you claim to do anything in that part of the island in the name of Queen Ránavalona, you will lose your lives." We smiled at the warning and landed from our boats amongst the very people who had been described as dangerous. "Where have you come from, and what do you want?" they inquired. "We have come from Antananarivo," was the reply, "and we have been sent by Queen Ranavalona to see if we can find coal in this neighbourhood." "Very well," they said, "the land belongs to the Queen of Madagascar, and if you are on her business, you can dig where you like." And we did, and instead of molesting us they brought us presents of fowls and ducks and geese and fat oxen, and treated us with the greatest respect.

W. C. P.



## THE RIVER ANTANAMBALANA.

(*From Proceedings of the Royal Geographical Society, Vol. xi., No. 5.*)

THE north-east of Madagascar is at present less known than almost any other part of the island. Indeed, with the exception of M. Grandidier (the well-known French traveller), no one has as yet done any exploring in that direction. Having been sent out last April by an English Company, to make a map of the river Antanambalana and report on some forest land situated at the north of Antongil Bay, lat. 15° S., long. 30° E., I had an opportunity of seeing something of this part of the country, which is certain in the near future to become much better known.

The district I had to visit consists of 1600 square miles, commencing on the coast-line at the extreme north of Antongil Bay and extending inland in a north-westerly direction.

With the exception of a mile or so of flat wooded land stretching along the coast, nearly the whole of this area consists of a succession of mountains, which rise to a height of about 2000 feet, and which are for the most part densely covered with virgin forest. The river Antanambalana flows down from the mountains in a south-easterly direction into Antongil Bay at about its most northerly point, and close to its mouth is the village of Maroantsetra, a place of some importance, having been twice bombarded by the French during the late war.

Unlike most of the rivers on this coast, the mouth of the Antanambalana is not closed by a bar, but ends in a small natural bay formed by a strip of land known as Bullock's Point, which bay affords excellent anchorage for good-sized vessels. The river varies considerably in width, being in many places quite 300 yards wide, while in others it is not more than 30 yards across; it is full of small islands and sandbanks, the latter being covered with water in the rainy season, while in the dry season they are left exposed and the river confines itself to a narrow channel. The depth of this channel varies constantly; sometimes when the water is very low it is in places not more than three or four feet deep, while in some of the reaches it is 15 or 20 feet in depth, even at low water. As it is not unusual for the river to rise or fall four or five feet in the course of a month, the current is very variable, and when full it is a matter of some difficulty to travel against it.

For the first 20 miles up from the mouth along the river-side are numerous small villages, generally with rice-fields adjoining; but, except where clearings have been made by the natives, the forest grows right down to the water's edge, the trees overhanging the river. About 22 miles up, rapids commence, which become stronger and more frequent as one ascends, and at a distance of about 30 miles from the mouth the river becomes unnavigable for large canoes, on account of some cascades, and although these were passed in a small canoe with considerable difficulty, the rapids beyond were found too strong and frequent to make it worth while to ascend further. At this point all traces of habitation had long since disappeared, and in the forest at the water's edge the undergrowth was so thick as to necessitate cutting one's way at every step.

The river, as far as was surveyed, is remarkable for having very few tributaries of any size. In fact, except for the Vohimar, which flows into it at Ambinanitolo, about 20 miles from the mouth, there are no important tributaries, though the main stream is fed by several small torrents which flow down from the mountains in the rainy season; but which in the summer are entirely dried up, and form useful paths by which to penetrate the dense forest. Though the Vohimar is a stream of some size, it is only navigable as far as is shown on the map, as here, too, cascades occur which make it impossible to ascend in canoes. Indeed, it may be mentioned that this drawback is found to exist in most of the rivers on the north-east coast.

The scenery throughout is very fine, the soil and climate being peculiarly adapted to the growth of vegetation. The forests in this district are rich in timber, among which are to be found in large quantities both rosewood and ebony, while several other hard woods, as yet unknown to commerce, are abundant. Of these woods a large number are used by the natives for building huts and making canoes, and it is only by this means that one can at present judge of their durability. Unfortunately, as our visit to the forest was made in the winter months, the specimens we collected were necessarily imperfect, it being impossible to procure either the blossoms or fruit from many of the trees, so that, out of forty-two specimens, only four could be identified at Kew. Of eighteen others, the genus was, with more or less certainty, ascertained; and of a few of the remainder the natural order,

Of the four which were identified, the native names are:—Nanto or Natte\* (*Chrysophyllum Inophyllum*); Azovola† (*Derris uliginosa*); Intzy‡ (*Azelia bijuga*); Paka (*Homalium nobile*). All these woods are abundant, especially Natte and Intzy. Natte is extensively used by the natives both for building and canoes; it is very hard, and in colour rather brighter than mahogany. The bark yields a bright red dye, and contains a large amount of tannin.

Azovola, a kind of rosewood, is finely figured, and should be useful for cabinet work. It is used chiefly for building purposes. Intzy is more used by the natives in this district for building their huts than any other timber, as no amount of exposure to the weather seems to affect it. It is a tough hard wood, of brown colour, which turns very dark with age. Like Natte, the bark yields a red dye which is very fast, and the wood also stains when first cut. The tree is large, and grows to a considerable height before branching. Paka, which is found in no other country, is a hard wood of bright red colour, but, as a timber, is inferior to the above-mentioned. With regard to the other trees (several of which are likely to be valuable for their timber), four were of the genus *Ficus*, four belonged to *Cynometra*, and three were *Anonaceæ*. Two were myrtles (*Eugenia*), and one was a species of *Cussonia*, belonging to the same natural order as our English ivy.

Besides the timber, the forests are rich in orchids, mostly epiphytes, the most remarkable belonging to the genus *Angræcum*, a feature of which is that the flower is remarkable for having a very long spur. The indiarubber vine (*Landolphia madagascariensis*) is also abundant throughout, though the natives, in collecting for the traders, have destroyed immense quantities of the larger creepers by pulling them up by the roots.

Of the fruits found here, the most common are pineapples, cocoa-nuts, guavas, bananas, mangoes, oranges, and lemons, which are noticeable for their very long thorns, and a fruit resembling a raspberry in appearance and taste, probably *Rubus rosæfolius*. Though many of these are not, of course, indigenous, they are found in the forest far from any villages, and thrive without any care whatever.

X Of the vegetables, the most common are rice, manioc, ginger, chillies (*Capsicum frutescens*), and a kind of bean (*Dolichos lablab*) much resembling a lentil in appearance and taste. Many of the traders on the coast grow European fruits and vegetables, which do well with a little care; among these may be mentioned tomatoes, potatoes, cabbages, onions, peas, and beans. The soil in which these vegetables are grown is sandy, and contains in some places a quantity of iron; but further inland clay is found mixed with the sand, and in the denser forest the soil is almost entirely of a dark red clay.

The largest wild animals found in these forests are the pigs, and these are very numerous, especially in the neighbourhood of the rice-fields. They much resemble the African wild boar, being inclined to a

\* This is the *Bintangore* or *Poon* of India. It yields one of the most valuable tropical timbers, and yields an oil known in India as *Pinnay oil*. It is found all along the east coast near the sea, and is generally known as *Foraha*.—EDS.

† Azovola (or more correctly *Hazovola*). If this is a tree, there must be some mistake here, as *Derris uliginosa* is merely a climbing plant.—EDS.

‡ Should be *Hintzy*. It is found all along the east and north-west coasts. *Homalium nobile* is the only one of the above peculiar to the island.—EDS.



brownish-red colour, and having long pencilled ears. Besides these are several varieties of lemur, of which the most common are the grey, the black-headed (*Lemur brunneus*), the ruffed (*Lemur varius*), and the white-fronted (*Lemur albifrons*). A fine lemur, with black head and feet, white breast, and red back, was brought down from the north by a native; but having eaten some beef one day, it unfortunately died before it could be brought home.

The babacoote, a species of large lemur without a tail, is also found here, as well as the aye-aye (*Cheiromys madagascariensis*), a nocturnal beast peculiar to the country, and several smaller animals, including large numbers of flying foxes.

Among the birds are several species of the pigeon, mostly of a bright green or a deep blue colour, and in the denser forest two varieties of the black parrot (*Coracopsis nigra* and *C. obscura*) are common. Occasionally also large quantities of guinea-fowl (*Numida tiarata*) were seen, though they were very wild and difficult of approach. A bird called by the natives "kirombo" (*Septosoma discolor*) frequents the high trees in the thicker parts of the forest. They are generally seen in pairs. The male and female are very different in appearance; the former having a grey head and breast, and dark green wings and tail, the feathers of which are tipped with dark red, while the female has a yellowish-brown head and breast covered with dark brown spots, the back and wings being of a greenish-blue. If one of these is shot, the other does not fly away, but perches or flies round close at hand calling for its mate.

Of the smaller birds the most noticeable are large flocks of parroquets (*Psittacula madagascariensis*), which keep to the more open tracts; the honey-bird (*Nectarinia souimanga*); the weaver (*Ploceus madagascariensis*), of bright red colour; two kinds of dark blue waterfowl with red beak and legs (*Porphyrio smaragnotus* and *P. alleni*); two kinds of cuckoo, one a very handsome blue bird with a long tail (*Coua cærulea*); the other a brown bird with long dark brown tail (*Centropus madagascariensis*). The banks of the river are alive with kingfishers (*Corythornis cristatus*), which much resemble the English bird, and there is also a rarer species of red kingfisher (*Ipsidina madagascariensis*) to be found as well. A bird almost as common as the kingfisher is the bee-eater (*Merops madagascariensis*), of a bright green colour. Herons and bitterns are also numerous, and the marshy places are the abode of thousands of teal and wild duck of various kinds.

The river itself contains innumerable crocodiles; indeed, in some of the villages we were informed that the deaths from these reptiles were as much as two per cent. a year. The snakes I obtained are now in Dr. Günther's hands at the Natural History Museum, and I am informed by him include some interesting species. A scorpion I brought home is stated by the same authority to be a new species (*Buthus piceus*); he has also named for me among the centipedes I brought home, *Scolopendra subspinipes* and *Spherothierium actæon*.

The fish, which are abundant, are caught by the natives making wicker enclosures in the shallow water along the banks; these enclosures have a small opening at which the fish enter at high tide; but which, when the water recedes, is closed so that they cannot escape, and are taken out as required. As the river throughout its course is shut in by mountains, the climate is decidedly unhealthy, malaria being

prevalent throughout the year. During the wet season the rainfall is almost incessant for a week at a time, and in the neighbourhood of the river the hill-sides are enveloped in white mist for three or four hours after daybreak, in spite of the fact that a bright sun is often shining. In the dry season, too, the mountains are visited by very heavy and frequent thundershowers, which swell the river and cause floods, making the neighbourhood most unhealthy after they have subsided. Besides this, the temperature is most variable, the thermometer often registering a difference of  $40^{\circ}$  between 6 a.m. and 10 a.m. Indeed, on several occasions during our stay it stood at  $58^{\circ}$  in the early morning, but by 8 o'clock had risen to  $12^{\circ}$ .

It will be remembered that nearly the whole of Madagascar is subject to the Hova tribe, who inhabit the centre of the island, and whose chief town, Antananarivo, is the seat of government. They are nominally ruled by a queen; but it is the prime minister (her husband) who really holds the reins of power.

This district is, of course, under the Hova rule, administered by a Hova governor chosen by the prime minister, and who remains in office during his pleasure. This governor is answerable to none but the prime minister for his actions; and being at least ten days' journey from the Capital, is practically all powerful in the neighbourhood; he resides in a village called Soanierana, situated about four miles west of Maroantsetra.

When the governor wishes to issue a proclamation, it is done as follows:—Messengers are sent out to all the villages under his control, bidding the principal men from each to assemble at an appointed time; this gathering is called a "kabary." When all those summoned are present, the governor or his deputy reads aloud the proclamation, which then becomes law; the representatives of each village being responsible for its publicity. It is not unusual to administer justice at a kabary of this kind; the governor, after hearing the evidence on both sides, pronouncing sentence. A law, which is universal throughout the island, and is the cause of much discontent among the various tribes, is that of forced labour. Under this law any native may be taken by Government and put to work of any kind for an indefinite length of time without receiving pay or even food; should he refuse, he is liable to be speared to death.

Having received instructions from the Capital, the governor of Maroantsetra welcomed us cordially; and when we started for the forest, sent with us officers, who, we were told, would accompany us all the time during our survey, to explain to the natives the reason for which we had come, and to ensure our not being hindered in our work. These officers (who were working for Government under forced labour) were relieved every week or ten days by others; and on returning to the governor's village reported to him exactly what we were doing, the real reason of their presence being, as we subsequently found out, to see that we did not search for gold or other minerals. During our journey we found the natives in most cases very hospitable and friendly; on our arrival at a village the chief would generally give up his house for our use as long as we chose to stay, at the same time presenting us with live poultry and rice. In some few instances the natives showed themselves suspicious; but the presence of the officers always ensured our being treated with civility.

The tribe which mainly inhabits this portion of Madagascar is that known as the Betsimisaraka. They are a more hardy and energetic race than the Hovas; and though smaller (their average height being 5 feet 5 inches), are wiry and well made. The women, who are notable for their fine carriage, are taller in proportion than the men, and do their full share of work, spending a good deal of their time fishing in canoes. The colour of this tribe is a good many shades darker than that of the Hovas, and the hair generally woolly, though occasionally it is found straight. Their features are of the regular negro type, showing no traces of the Malay blood which are so frequently seen in the ruling tribe. They are of a naturally peaceful disposition, and though not wanting in physical courage, are full of superstitions of all kinds. They are a light-hearted, lazy race; but if well treated, prove efficient workmen, and are decidedly more cleanly than any of the other tribes with which we came in contact.

Besides the Betsimisaraka are also found the Bara tribe, numbers of whom come up from the south in order to procure work, generally staying for six months or a year at a time. One of the characteristics of this tribe is that they arrange their hair in numerous small plaits around the head, anointing it plentifully with beef-fat. In physique they much resemble the Betsimisaraka, though they are by no means so intelligent. A tribe somewhat resembling this is the Tsimihety, who also are found in these parts, and are a tall athletic race, but by no means cleanly either in their appearance or habits.

A few of the Sakalava (a warlike tribe from the west coast) also find their way here. They are physically the finest race on the island, and have always resisted more or less the Hova Government. It was this tribe, it will be remembered, who assisted the French against the Hovas during the recent war.

In engaging workmen the cost of labour is not a serious item, as unskilled men can be procured for from \$2½ to \$3 per month, while a skilled carpenter can be obtained for from \$4 to \$9. This does not include keep, which does not, however, amount to much, as living entirely on rice, a man can be well fed for \$½ a month.

Besides these tribes, it is interesting to note that one hears occasionally of wild men being seen in the dense forest. We were informed by a trader from Mauritius, a Mr. Carmes, who saw him, that in 1879 a wild man was captured a few miles west of Maroantsetra. He was caught by some Malagasy in the employ of a Manahar trader while asleep on the branch of a tree, and when taken resisted violently, biting his captors severely; after a few days' confinement, however, he ceased to be aggressive. Mr. Carmes describes him as being a powerfully built man of about five feet nine inches in height, his face and body being thickly covered with long black hair; his mode of walking was peculiar, as he travelled very fast, with his head down, occasionally going on all-fours, his eyes (which resembled in expression those of an animal rather than of a human being) invariably being fixed on the ground. When caught he was perfectly nude, but wore clothes when provided with them. He could never be induced to eat flesh or any kind of cooked food, subsisting entirely on manioc and other roots; nor would he sleep in a recumbent position, but when resting preferred to squat on hands and feet on a stool in a corner of the house. After some weeks he com-

menced to learn a few words, and by means of these and signs it was understood that he had a father and two brothers in the forest where he was taken. These were found and surrounded by a search party one night, but, being disturbed, easily eluded their pursuers, jumping from tree to tree like monkeys and running on all fours. The captured man died five months after being taken.

The tribes, though having constant intercourse with one another, maintain to a great extent the customs peculiar to each; the Betsimisaraka, for instance, having quite a different mode of burying their dead to that of the Hova. While the latter have their tombs made of rock, in which they deposit the corpses wrapped up in several lambas, the Betsimisaraka employ quite a different method. Having chosen a spot for the cemetery in the forest, as near a river as convenient, a clearance is made. To this clearance the corpses, having first been placed in rough wooden boxes, are conveyed and deposited on the ground. It is the custom after the ceremony to place at the head of these rude coffins a bottle of rum to propitiate the spirits. That this attention is appreciated is evident from the fact that the bottle is invariably found empty on the following day. Every four or five years it is customary to place the remains in a new box, which is the occasion of a feast, a bullock being killed and the ceremony performed amid general rejoicing.

It should here be mentioned that the respect in which deceased relatives are held by this tribe (as, indeed, is the case with all the tribes) is most marked, and the greatest insult possible to a native is to swear against his ancestors, although he will bear with perfect equanimity any amount of strong language directed against himself.

X The custom of "fato-dra," or brotherhood by blood, as described by the Rev. James Sibree in his book, 'The Great African Island,' is prevalent. It is carried out in this district as follows:—When two men from friendship or interested motives, decide to become brothers by blood, a day is appointed, their relatives called together, and an incision having been made in the breast of each, two pieces of ginger are brought and one piece dipped in the blood of each man. Each one then swallows the ginger which has been immersed in the blood of the other, at the same time repeating solemn vows to assist the other to his utmost in all his undertakings, and in any need whatever, should occasion arise. The vows thus made are regarded as sacred.

X Another custom, or rather superstition, which is apt to prove inconvenient to travellers, is that among certain tribes certain days are considered unlucky. On these days no one transacts business; and should the traveller arriving at a village wish to procure food, no one will sell him anything; nor can the inhabitants be persuaded to part with an article for even double its value. When a native has a relation who is dangerously ill, it is also considered unlucky for him to buy or sell.

There is a great resemblance in the dress of all the tribes; the lower classes wear a grass mat hung over their shoulders, and gird their loins with a piece of cloth; except for this they are nude. Those who can afford it, in place of a mat, wear a lamba, a garment made of cotton or some other light material, which is loosely and picturesquely draped round the figure; these are most commonly of white; but they are also frequently worn in bright colours, or with an ornamental border, and are cast aside when any work requiring exertion has to be done. The

dress of the women is much the same as that of the men, though the lamba is generally draped more closely round the figure, and sometimes fastened with a girdle. The men frequently wear a little round cape made of grass of the brightest colours; both sexes carry charms on the breast suspended from a necklace, in which they have the greatest faith. Every native carries a snuff-box made either of a piece of bamboo or horn; but instead of taking the tobacco through the nostrils, it is always placed in the mouth under the tongue.

The dress of the Hova officials is varied and characteristic; the poorer officers generally wear a lamba and tweed trousers, and invariably carry an umbrella, while the more exalted prefer a uniform, which uniform is not apparently regulated by the rank of the officer, but depends on his taste and the length of his purse; as an instance of this it may be mentioned that the governor of Maroantsetra has lately ordered from England an English general's full-dress uniform, and an admiral's cocked hat, to wear on state occasions.

The mode of dressing the hair has been touched on before; but it may be mentioned that the women will spend hours at a time over this part of their toilet; which, indeed, the men too do not neglect, attaching considerably more importance to it than to the more necessary duty of washing. The only weapon carried by the natives is a spear from five to seven feet in length, with an iron head and tail-piece, which latter is made flat for the purpose of digging up roots. They are very expert in hrowing these weapons, and also use them for spearing fish.

The favourite musical instrument is the accordion, which is imported in large numbers, and always finds a ready sale; their skill, however, on this instrument is limited, as they seldom master more than three or four chords, which they will play over and over again for hours at a time. Of the native instruments the principal are a kind of *banjo* made of gourds, with a wooden shank, having two strings made of fibre; and a somewhat more elaborate instrument made out of a bamboo by splitting the strings out of the surface of the bamboo itself, and stretching them by inserting small cork bridges. These are most difficult to play, but are most pleasant to listen to on the rare occasions when one hears a good performer.

The type of house found all along the north-east coast is much the same. They are built on poles, the floor being raised from four to eight feet from the ground on account of malaria.\* Except in rare instances the dwelling consists of one room only, which is seldom more than 10 feet square. The house is entered by ascending an inclined pole notched on the upper surface so as to provide a foothold. There are generally two doors on opposite sides of the house and facing one another, which are opened by sliding back. There are no windows or chimneys; but a hearth made of clay is built in one corner, and over this is hung a rack of bamboos, on which the fuel and other articles are placed to dry. In another corner are piled bags of rice for family consumption and the large bamboos which are used by the women as vessels for fetching water. The floor is covered with grass mats, and when a stranger arrives a clean mat is always provided. The roof is thatched with the eaves of the well-known traveller's palm, the walls being made of dried rushes. Sometimes as many as ten people live together in one of these huts.

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\* More probably these raised houses are the still lingering form of lake-dwellings.—EDS.

As the country is very hilly and the forest dense, there are but few pathways, and of course no roads whatever. The chief mode of progression, therefore, is naturally by means of the different rivers, along the banks of which most of the villages are situated. As the natives spend a large portion of their time upon the water, they become very expert in handling a canoe; and it is common to see a child of five or six years seated in a small canoe and guiding it with considerable skill in a strong current. As before mentioned, the rivers contain several rapids, in shooting which good judgment and nerve are required, as a false step would often be fatal.

The canoes are of all sizes, from the small single canoe, not more than five or six feet in length, and just wide enough to sit in, to the large canoes on the coast, which are occasionally used on the sea, as long as 35 feet, and sometimes 5 feet in width. Whether large or small the shape is always the same; both prow and stern being pointed and slightly raised. They are made from the solid trunk of a tree, being hollowed out by burning fires on the surface and scooping out the charred wood until a sufficient depth is reached, the outside of the canoe being shaped with an adze. They are propelled by means of a short paddle with a wide blade, having a crescent-shaped handle on the top.

As at present the only method of sending goods from this district to Tamatave is by means of small sailing vessels, there is not yet much done in the way of trade here. There are, however, a few traders at Maroantsetra who send cargoes of the principal products to Tamatave for export. Of these the most important are indiarubber, rice, hides, beeswax, and mats.

The method of preparing indiarubber for the market, as before alluded to, is most wasteful; for, besides entirely destroying the plant, by no means the full amount of juice is extracted. The process of preparation for export is this:—The creeper is first chopped up into short lengths and crushed, the juice being collected in a wooden vessel, after which it is mixed with a weak solution of sulphuric acid and water, and worked by the hands into balls, which are pricked all over to allow the water to escape. Several creepers in the forest yield a juice similar to the genuine rubber, but entirely worthless; as these are very abundant, the natives, to save themselves trouble, frequently mix them with the rubber juice before offering it for sale, and it requires a careful examination to detect the fraud.

Besides the collecting of rubber, the making of Malagasy mats is almost the only other industry here. These are manufactured in nearly every village, however small, by the women, being woven by hand, and the different colours obtained by the use of dyes extracted from trees and plants.

The wealth of timber in these forests has lately induced several people to apply to the Government for concessions, and should it prove as valuable as is expected, a new and important industry will be developed which will rapidly open up the country. As the soil is so prolific, it is to be hoped that in the course of a few years, when these large tracts of forest land are cleared of their timber, plantations of tobacco, vanilla, coffee, and other such products, will spring up in their place.

L. H. RANSOME.

## ORTHOGRAPHICAL ERRORS IN MALAGASY WRITING.

ALL who read Malagasy literature, and especially those engaged in preparing work for the press, must feel sometimes annoyed at the occurrence of sentences which admit of two totally different meanings; such ambiguities are of by no means infrequent occurrence, and they become doubly exasperating when we bear in mind that these same sentences are generally perfectly clear in meaning when spoken. The obvious inference is that something is amiss with the orthography, and my object in this paper is to point out some instances where I think we are running on wrong lines, and to advocate the adoption of a few changes in our orthography which will be found to remove all danger of ambiguity, as well as to obviate the necessity of having to reconstruct sentences to avoid confusion.

Our mode of dealing with the personal article *I* may suitably first receive attention, as on this depends the possibility of carrying into effect the improvements I have to suggest.

Mr. Cousins says in his *Concise Introduction to the Study of the Malagasy Language*, that "variety of opinion has always existed as to the correct way of writing this prefix. With many words it is united, as *Ilàfy*, *Ikòlobè*. Père Webber gives three ways: (1) *Ny zanàky i Joàry*; (2) *Ny zanaky Joary*; (3) *Ny zanak' i Joary*; to these may be added a fourth: (4) *Ny zanak' Ijoary*." Mr. Baron pointed out some years ago (ANNUAL No. X, pp. 216-218) that "four other ways of writing it may also be added: (5) *Ny zanak' ijoary*; (6) *Ny zanak' IJoary*; (7) *Ny zana-ky I Joary*; and (8) *Ny zanaky IJoary*. Of these various ways, the second, which is the least correct of all, is the one now in use. I say 'least correct,' because the personal article, while it distinctly appears in Nos. (1), (3), (4), (5), (6), (7), and (8), becomes in (2) identical with a form which expresses the possessive."

I shall have something to say about the "form which expresses the possessive" later on. At present I wish to point out that the Bible Revision Committee has really discarded the personal article, for although it may be held to be incorporated in the termination of the previous word under certain circumstances, very frequently no trace of it whatsoever is preserved, e.g. *Nitsàngana Pitèra*; *Nilòà-bàva Paoly*. Is it not imposing on our good nature to tell us that the *I* is there all right, as it is to be found in the final letter of the preceding word, when that letter happens to be a *y*? We find in fact this strange anomaly, that the personal prefixes are almost invariably discarded before foreign and introduced names (although these are subjected to certain other alterations in order to Malagasize them), while they are seldom or never omitted in true Malagasy names.

It therefore becomes necessary to restate the fact that there is no such thing as a Malagasy personal name without a personal prefix. Malagasy names are taken from any common words or compounds, as *mamba* (crocodile), *firinga* (dunghill), *samaka* (child), *safindraià* (grand-

child of a grandfather), the most astounding instance I ever met with being, *zanabazahakatsikamolananoraraianmandrenindrindrakamiadanaminizay* (which the unfortunate owner thereof was compelled to pronounce in full on all occasions). None of these words as they stand partake of the nature of proper names. The word *mamba* may be used a hundred times, but it still refers to the crocodile; but add a personal prefix, and it immediately drops its ordinary functions, and may be used a thousand times without the hearer's thought reverting for one moment to the crocodile. In fact the *I* is the personal part of the word, or, as a Malagasy would put it, *Ny lòmpon' ny hery*, the rest of the word being simply a distinguishing sign by which one *I* is known from another. And I maintain that it would be no more unreasonable to discard any other prefix, say, for instance, the active prefix *man-*, than it is to drop the personal prefix *I*. I hope to make it clear that if we are to avoid ambiguities in our orthography, it is absolutely necessary that this *I* (of course the prefix *Ra* answers the purpose as well, if preferred) be written, as much in introduced as in true Malagasy names. Indeed, why trouble to alter the form of introduced names at all, if the very thing which makes a name a name, to the Malagasy mind, is omitted? Here I am met with the objection that it was the Malagasy on the Bible Revision Board who would not have the personal prefix added to introduced names. I reply: Is that a valid reason for rejecting it? Malagasy logic is not always a first-class article, and if they object so strongly to the personal prefix, why do they invariably use it in their own names? When *Radàma* is called *Dama*, and *Ikòto* called *Koto*, and *Rànavàlomanjaka* called *Navàlomanjaka*, then we may accept their dictum that *Petera* is more correct than *Ipetera*. We are constantly meeting with Malagasy names taken from the Bible, but they invariably have the personal article *I* or the personal prefix *Ra* added to them, as *I Jaona*, *I Daniela*, *Rapaòly*; and this being so, what reason can there be for not writing them as they are spoken? Surely that mode of writing is most correct which most exactly represents the spoken language. There are many things the Malagasy object to that we hold to be right, such as roads, railways, payment for service instead of *fànompòana*, a decent coinage, trading without bargaining, and transport companies. Were we to wait for their approval before endeavouring to get these things introduced, we might wait for ever! And who is prepared to state that if any points in Malagasy grammar or orthography are proved to be incorrect, they must yet be maintained because of Malagasy conservatism? Moreover the objection is by no means universally held. I have conversed with many educated Malagasy on the points treated of in this paper, and I generally find them open to conviction.

The best manner of writing the *I* is of course a matter of taste, but, as Mr. Baron says: "by having the *i* (or *I*) separated from its noun the foreign name would stand unaltered, which would be an advantage." Personally I am inclined to vote for the capital *I*, but space will not be sufficient to allow of dealing with the question now. I hope that this and other matters requiring attention will some day be thrashed out in public discussion, so that a satisfactory solution may be arrived at. Why, indeed, cannot a six-monthly or annual conference be instituted for the discussion of various points in connection with the language? It would ensure more practical results than the present



system of depending entirely on the ANNUAL for the unravelling of knotty points.

Whatever views may be held, it should be borne in mind that the question of *appearances* ought not to be allowed to weigh for a moment. I am sorry to say that this objection is persistently upheld by a few. They say : "How ugly a small *i* would look prefixed to words," and yet they never say a word about the *d* in *Avàra-dRòva* ! The fact is, this is purely a question of educating the eye. I looked in a book the other day and saw turn-down collars ridiculed as being the acme of masherdom ; no one now so regards them. I suppose a few years ago not many ladies dared have gone about London without "dress improvers," yet these articles are now pretty generally regarded as one of the most hideous inflictions ever imposed by fashion upon long-suffering humanity. And it is exactly the case with changes in orthography ; once get accustomed to a new fashion, and one wonders how people could ever have endured the old style.

Now for my second point. It has generally been supposed, I believe, that *an'* (or *an-*) and *any* as separate words are identical, and this supposition has caused much ambiguity in Malagasy orthography. As a matter of fact, the two words are entirely distinct from each other, different in meaning and pronunciation, and not interchangeable. We may say, *Any Ambòhimànga izy*, or *An' Ambohimanga izy*, the first sentence meaning that he is at Ambohimanga, the second that he *belongs to* that place. Again, *Mikabàry an' Ambohimanga*, and *Mikabàry any Ambohimanga*, are totally different in meaning and slightly so in pronunciation. The difference between the two words is very clearly brought out when the *an'* or *any* precedes a word commencing with R, as *Ramainàndro*. We find that in certain cases *Any Raimainandro* is invariably used, and in certain other cases *An-dRaimainandro*. Now if the words are one and the same, why is this difference made, and why in some cases is a *d* required to connect the *n* and *r* (these not being an allowable combination) when all the time the *y* is there as part of the word ? It is surely a curious kind of "contraction" to throw off one letter and substitute for it a hyphen and another totally different letter. After testing hundreds of examples I find the following rule to hold good universally : *Any* can only be used adverbially, and never as the sign of a possessive or accusative case ; while as a sign of the possessive and before a proper noun in the accusative case, *an'* is always the word used.

If any other proof were needed of the difference between these words, we have it in the fact that *any* can be put in the past tense by making it *tany*, whereas *an'* cannot be so altered. In general practice the distinction between the two words is maintained so long as true Malagasy words are being dealt with, but the moment introduced names are encountered, another orthographical error has to be allowed, as a consequence of the omission of the personal prefix in proper names ; in other words, we find one error unworkable, and so to balance matters we make another !

I have been met with this objection : "The words are one and the same, but don't you see that under certain circumstances the *y* is changed for an apostrophe ?" Quite so ! And just in the same way *hay* and *straw* are one and the same, but while under certain given circumstances we always pronounce and spell it *straw*, under certain other circumstances it is always more convenient to call and spell it *hay*.

One word as to what the possessive case sign *n'*, or *an'*, is. Taking the sentences: *An' Iboto ny bóky*, and *Bokin' Ikoto ity*, it is quite evident that the *n'* of *An'* and *Bokin'* are identical. We say, *An' isa ity?* and *Sézan' isa ity?* Here too the *n'* is exactly the same in each case, and while one sentence means: *Whose chair is this*, the other evidently means, *Whose A is this?* And in reply to the interrogative we get the corresponding answers: *An' Iboto izy* (It is Boto's *A*) and *Sézan' Iboto izy* (It is Boto's chair). Now besides this we sometimes find the possessive case-sign *n'* pronounced *an'* even when affixed to nouns, as *Sóloan' dRanona* for *Sólon' dRanona*. The reasonable deduction from these considerations is that the *n'* is not a fragment of *ny*, as Mr. Dahle and others have held, but is rather a remnant of *an'*, and we may reasonably suppose that the *a* was originally some substantive form which placed the word following it in the possessive case, the *n* being merely a connecting link between the *a* and the word it governs, as Mr. Cousins and Mr. Jorgensen tell us is the case in such combinations as *Vôlom-bôva* (*Volo n vava*). Perhaps the *a* should be regarded as being in apposition to the preceding noun, as *Bokin' Ikoto* = *Boky a n Ikoto* (the book which is the *a* of Ikoto). Whether this *a* was originally a pronoun or what, I cannot say; it is there clearly enough, and the lack of precise information as to its exact meaning does not alter the fact, any more than a person's not being able to say what a comet is, is proof that the comet does not exist. The question here naturally arises whether the *n* really belongs to the preceding word at all, or whether it should not rather be regarded as a possessive prefix. So treated, it removes several difficulties, for we are no longer perplexed by a word ending in a consonant, or puzzled to account for the sign of the possessive being affixed to the preceding word instead of to the word placed in the possessive. This is worth consideration.

Do we not find this identical *An* form used as a prefix in the names of towns? As in the case of persons we say, *An' isa ity*, so in the case of places this same *An'* is used with the interrogative pronoun *inona* (instead of *isa*), and we get *An' inona* (the *A* of what, or connected with what) *ity?* The reply in each case preserves the *An* form, as, *An' Iboto* (the *A* of, or connected with, *Iboto*); *An' Tananarivo* (the *A* of, or connected with, *Tananarivo*).

Now let us see what benefits would accrue from the adoption of the changes I have advocated, viz. that the personal prefix *I* be always written, and the distinction observed between *an'* and *any*. Admitting the *n'* or *an'* to be the forms which govern words in the possessive, it naturally follows that we must discriminate between the *n'* and the suffix pronoun *ny* (this latter I take to be the personal article *I* joined to the preceding word by the connecting letter *n* = *n I, ni, ny*). At present these two forms are used indiscriminately, the error, as before, arising from the omission of the personal article *I*, in introduced names. We get *aminy Jaona* for *amin' I Jaona*, and yet *amin'* and *aminy* are distinctly different, just as *namidin' ny mpandrafitra* is the very opposite of *namidin' ny mpandrafitra*. But it is evident that they cannot possibly be correctly written if the personal prefix *I* is rejected.

I reproduce a few ambiguous sentences from Mr. Baron's paper on "The Personal Article *I*"; we have: *Nanao izàny izy, ka nitèny tàminy Paoly*, which at present may mean either: (a) He did that and said to Paul, or (b) He did that and Paul said to him. In 1 Chron. xx. 7, we had in

the first revision of the Bible: "*Ary nahaika ny Israely izy ka matiny Jonatana, zanaky Simea, rahalahiny Davida.*" Here it does not appear whether the *lehilahy vaventy* mentioned in the previous verse was killed by Jonathan, or Jonathan by the *lehilahy vaventy*, which is certainly most unfair to Jonathan! The whole structure of this sentence was altered in the second revision because of its ambiguity, arising from the cause already pointed out. By adopting the above-mentioned changes we should get, in the two examples here given, a distinct form for each meaning: *Niteny tamin' I Paoly izy* (he spoke to Paul), *Niteny taminy I Paoly* (Paul spoke to him); and *Matin' I Jonatana* (killed by Jonathan), *Matiny I Jonatana* (Jonathan killed by him).

In the *Geografy Kely* I find the following: *Sisilia any Italia; Kandia any Torky; Seina, misy any Parisy*. I suppose the first two sentences are meant to inform us that Sicily and Candia belong to Italy and Turkey respectively, whereas they actually tell us that Sicily is situated in Italy, and Candia in Turkey! As for the third sentence, for some time I could not make head or tail of it, for the only information adducible therefrom seems to be: The Seine, there is some of it at Paris. Such a sentence, however, is wrong in any case, as *misy* has no such meaning as that intended here; probably *mandalo* is meant. It would then be, correctly written: *I Seina, mandalo an' I Parisy*.

Space will not allow of any number of examples being given here, but in the reprint of the *Geografy Kely* the above changes are to be carried out, including the separation of the prefix from the names of places, so that these suggestions will soon be put to the test of practical application.

J. C. KINGZETT.

THE editor, knowing my great interest in all questions of Malagasy orthography,—an interest quickened and sustained by many years of labour in the cause of elementary education—has favoured me with a proof of Mr. Kingzett's paper, and has given me permission to add a few words bearing on the points therein discussed.

1. The impropriety of the present mode of treating the definite prefix *I* before introduced foreign proper names was some years ago fully and clearly shown by Mr. Baron. Nothing therefore remains to be done, as is urged in the preceding paper, but to arrive at some agreement for treating it better in future. Of the various proposed modes of writing it, I prefer that it should be prefixed and attached to the name, but written small; e.g. *iDavidra, iAbrahama*. I say *attached*, because it has no longer any independent meaning, and because it is easier to treat the prefixes *Ra* and *Andria* in the same way. I say written *small*, that, if attached, it may not attract attention from the distinguishing part of the name. Ikoto may not object in the least to his name being written *iKoto*; but Ranaivo, Rantoandro, Rambelo, and Andriamparany may not at first perhaps quite like to see their names presented as *raNaivo, raAntoandro* or *r'Antoandro, raAmbelo* or *r'Ambelo, andriaAmparany* or *andri'Amparany*. Still the eye that has become accustomed to *an-dRanaivo* should not be pained to look on *raNaivo*. Should there be an invincible, though unreasonable, repugnance to the prefix being written small, the next best mode of writing it would, I think, be to write it

with a capital, but not attach it to the name, i.e., to treat it as we do the prefix *Mr.*; e.g. *I Koto, Ra Ambelo, Andria Amparany*.

2. I think we may be grateful to Mr. Kingzett for directing our attention to the difference in meaning between *any* and *an*, and we ought to be careful not to write the former for the latter any more.

3. With regard to the third point raised, the presumed identity in meaning of *an'*, *n'*, *am-* and *m-*, as used in compounds to mark case relation, I would add illustrations as the following: *an' olona, tranon' olona, Ambato, tranom-boalavo, asain' olona, nataom-bily* (where the possessive nouns are all indefinite), and *an' ny olona, tranon' ny olona, an' ny vato, tranon' ny voalavo, asain' ny olona, nataon' ny biby* (where the possessive nouns are all definite).

I think Mr. Kingzett's hypothesis that *a* in the *an* above-mentioned, was once a noun or a pronoun, has much to be said in its favour (*Vide* Mr. Dahle's paper in *THE ANNUAL*, No. XI. p. 294: "I have long been of opinion that these prepositions are to be regarded as nouns"). Mr. Dahle, speaking of a Melanesian preposition *ana* or *an*, says: "This is of course the Malagasy *an*, which always combines more closely with the following word, a combination which in Malagasy is usually marked with a hyphen (*an-tanety, an-tany, an-danitra, am-po*, etc.)." I wonder that it did not occur to Mr. Dahle that this *ana* or *an* may very probably be a compound of *a*, which is certainly so found, and the *na*, which, as he says, is often found between two nouns in Malay proper and which places the latter of the two in a possessive relation to the former: e.g. *anak-na rada*, the child of the king. If, as Mr. Kingzett supposes, *a* was originally a pronoun meaning *something* quite indefinite, then *ana* would mean *something belonging to something*, and *an* compounded with what follows, *something belonging to*, the final *a* being no longer required, as the thing possessing would be then defined. Similarly the thing possessed being defined, the initial *a* would be no longer needed. (May not *ana* be the primary root of *manana*, to have, *anana* being a reduplicative?) If this could be proved it would not establish the identity of *an'*, *n'*, *am-*, and *m-* but of the *n* or *m* in all four. The origin and original meaning of the so-called sign of the genitive or possessive case or *casus constructus* can only be determined as the result of comparison of dialects and cognate languages, and I have neither the knowledge nor the materials for pursuing the subject. I think, however, that enough is known to justify one in saying that the so-called genitive sign may just as properly be attached to the second of the two words it brings into case relation as to the first, and more properly so, if it can be shown, as I think it can, that there would be a distinct advantage to the orthography and to the understanding of the grammatical construction in so placing it. It may be said that Malagasy orthography is sufficiently simple already; but not so, I say, if it can be made still simpler without any loss of legibility, and without any loss of its phonetic character.

Whatever may have been the origin of the prefix *an* or *am*, no one can doubt that it is now a proper prefix, and I would therefore urge that in future we should attach it to the word which follows without any intervention of either apostrophe or hyphen. We do this already in many cases without hesitation, e.g. *anaty, ambony, ambany, ampovoany, ambaraka, ankavanana*, etc. Why not do it also with forms such as the following:—*ampo, ampiangonana, antsaha, anolona, antandana, an'Ikoto*

or *anikoto* or *anIkoto*.—In cases where the *an* is followed by a pronoun or by a definite noun preceded by the article *ny*, I would join as above but omit the *n* of *an* before the article, and signify the omission by an apostrophe: e.g. *anizy telo lahy, a'ny fanjakana*.

It would also be an improvement to the orthography, and would, I believe, lead to a better understanding of the grammar to attach the so-called sign of the possessive or ablative to the governed noun: e.g. *trano nolona, trano mboalavo, hery mpo* or *herimpo, natao mbily, trano 'ny olona, hidy 'ny trano*. In the last two examples the apostrophe is an indication that what follows is a possessive, the *n* of the possessive being lost in the *n* of the article. Where a syllable is lost in a compound, I would also mark the loss by an apostrophe: e.g. *fisia' nkanina, oha' teny, miara' manao, afa' po, levo' ny afo*. In the last example not only does *levona* lose its last syllable, but the possessive *n* is also sunk in the sound of the same letter in *ny*; the one apostrophe would be sufficient to mark the absence of both. In reading such compounds as those given above, it is important that no pause whatever should be made between the two parts of the compound.

By adopting the suggestions above-mentioned, we should remove some anomalies in the present orthography and therefore some stumbling-blocks in the way of those learning to write, to wit, that *bête noire* to a Malagasy, a syllable closing on a consonant, and the present very inconsistent use of hyphen and apostrophe.

In anticipating objections to such changes as those suggested, I decline to recognise any argument based solely on the theory that 'what is, is right,' as well as any argument against the oddity of the new form suggested, so far as such oddity is caused by a variation from that to which the eye has hitherto been accustomed. I do recognise some value in the argument against a change on the ground of the great temporary inconvenience and confusion that it would cause, and the argument with which I would meet it is, that the convenience and permanent benefit resulting from the change is likely to be greater than the temporary inconvenience and confusion.

Some one may ask how I propose to write possessive compounds in which the governing word ends in *ka* or *tra*; e.g. *vokatry ny tany, menaky ny tany, faniatry ny olona*.

These possessive compounds do not seem to be formed in the same way as those already spoken of; and if so, they do not require logically to be similarly treated. The possessive relation in these seems to be indicated by bringing the governing word and the word governed into closer association, and this is secured by substituting the shorter vowel *y* for the longer vowel *a*. (*Vide* ANNUAL No. XI. p. 290, Sect. 3(a).) This is one guess, as I am afraid it must be called, at an explanation. Another guess is, that *ka*, *tra*, and *na*, the usual final syllables of what are called trisyllabic roots are, or rather were, indefinite possessive pronouns, and that they become definite by substituting the definite pronoun *y* for the indefinite *a*. (*Vide* ANNUAL No. XI. p. 347: "Dr. Codrington points out that the Maori and Polynesian possessives are *ku*, *re*, and *na*".)

As the present mode of writing such possessive compounds as *vokatry ny tany, menaky ny tany*, etc., presents no difficulty to a native, I think

we should make no change, even though the governing word is modified by the possessive relation rather than the governed.

Until we know more about the three final syllables *ka*, *ta*, and *na* their origin and their meaning, there will be much we cannot understand in the mode of expressing case relation in Malagasy.

J. C. THORNE.

## X GEOLOGICAL NOTES.

### A COMPLETE LIST OF THE KNOWN FOSSILS FROM MADAGASCA

THE following is a complete list of all the fossils hitherto found in Madagascar. They were collected by M. Grandidier, Rev. J. Richards and myself in North-west, South-west, and South Madagascar. Comprising as they do, only 105 species, they are of course a mere handful compared with those that still await discovery. For descriptions and figures of the more or more important species see *Bull. Soc. Géol. France*, Vol. xxv, p. 39; *Journ. Conchyliologie*, Vol. xvi, pp. 180-187, pl. vii, figs. 1-3; *Comp. Rendus*, Vol. lxxiii, p. 1392, and Vol. lxxvi, p. 3; *Quart. Jour. Geol. Sci.* Vol. xlv, part 2, p. 331-338.

#### QUATERNARY.

##### **Pelecypoda.**

*Lucina tigrina*, Linn.

##### **Gasteropoda.**

*Bulinus Favannet*, Lamarck

" *Grandidieri*, Cr. et Fisch.

" *subobtusatus*, Cr. et Fisch.

" (allied to) *crassilabris*, Gray

*Helix* sp.

*Cyclostoma* (*Ottopoma* ?) *Grandidieri*, Cr. et Fisch.

##### **Reptilia.**

*Crocodylus robustus*, Grand. et Vaill.

*Testudo Grandidieri*, Vaill.

" *abrupta*, Grand.

##### **Aves.**

*Aepyornis maximus*, Edw. et Grand.

" *medius*, Edw. et Grand.

" *modestus*, Edw. et Grand.

##### **Mammalia.**

*Hippopotamus Lemerlei*, Grand.

Cape St. Mary, S. Madagascar.

" " "

" " "

" " "

" " "

" " "

N. of Tulcar, S. W. Coast.

" " "

" " "

" " "

" " "

" " "

#### TERTIARY.

(Eocene).

##### **Foraminifera.**

*Alveolina oblonga*, d' Orb.

" *longa*, Ozjzek.

" (allied to) *ovoides*, d' Orb.

*Nummulites Beaumonti*, d' Arch. et Haime

" *sub-Beaumonti*, de la Harpe

" *acutus*, J. de C. Sowerby

" *obesus*, d' Arch. et Haime

" *biaritzensis*, d' Arch. et Haime

" *Ramondi*, DeFrance

*Assilina spira*, de Poissy

N. of Majamba Bay, N. W. C.

Bembatoka Bay, N. W. Coast.

Mountains on shore near St.

gustine s Bay, S. W. Coast.

N. of Majamba Bay, N. W. C.

" " "

" " "

" " "

" " "

" " "

<i>bitoides</i> (allied to) <i>papyracea</i> , Bouée	Mountains on shore near St. Augustine's Bay, S. W. Coast.
" sp.	N. of Majamba Bay, N. W. Coast.
<i>bitolites</i> ? sp.	" " "
<i>italia</i> ? sp.	" " "
<i>ilocolina</i> (allied to) <i>trigonalis</i> , d' Orb.	Mountains on shore near St. Augustine's Bay, S. W. Coast.
<b>Pelecypoda.</b>	
<i>strea</i> <i>Pelecypodon</i> , Fisch.	" " "
" <i>Grandidieri</i> , Fisch.	" " "
" <i>hippocastanum</i> , Fisch.	Bembatoka Bay, N. W. Coast.
<b>Gasteropoda.</b>	
<i>eritina</i> <i>Schmideliana</i> , Chemnitz	Mountains on shore near St. Augustine's Bay, S. W. Coast.
<i>erebellum</i> (allied to) <i>obtusum</i> , J. Sowerby	" " "
<b>Pisces.</b>	
<i>toliths</i> . Doubtful whether of Eocene or recent origin (see appendix). Ankoala, N.W. Madag.	

## SECONDARY.

## (Cretaceous.)

<b>Pelecypoda.</b>	
<i>lectryonia</i> ( <i>Ostrea</i> ) <i>ungulata</i> , Schlotheim	Two or three miles north of Ambohitrômbikely, near Mojangà, N.W. Coast. (Upper Cretaceous.)
" " <i>pectinata</i> , Lamarck	Béseva, N.W. Madag. (Upper Cretaceous.)
" <i>Deshayesi</i> (?), Fisch.	Two or three miles north of Ambohitrômbikely, near Mojangà, N.W. Coast. (Upper Cretaceous.)
<i>ryphea</i> <i>vesicularis</i> , Lamarck	" " "
<i>exogyra</i> <i>ratisbonensis</i> , Schlotheim	" " "
	(Middle Cretaceous.)
<b>Cephalopoda.</b>	
<i>Vautilus</i> <i>Fittoni</i> , Sharpe	" " "
<i>Belemnites</i> <i>conicus</i> , Blainville	(Upper Cretaceous.)
" <i>polygonalis</i> , Blainville	Ankaraobato, N. W. Madag. (Neocomian.)
" <i>pistilliiformis</i> , Blainville	Béseva, " " "
" <i>binervis</i> , Raspail	" " "

## (Jurassic.)

<b>Actinozoa.</b>	
<i>Isastræa</i> <i>Fischeri</i> , Fromental	Ankarâmy, near N.W. Coast. (Lias ?)
<i>Thamnastræa</i> ? sp.	S.W. " Madag., about Môrondava. (Lower Oolite ?)
<i>Montlivaultia</i> <i>trochoides</i> , M. Edwards and Haime	" " "
<i>Epismilia</i> <i>Grandidieri</i> , Fromental	(Lias ?)
<b>Echinodermata.</b>	
<i>Pentacrinus</i> sp.	N. of Andrânosamonta, N.W. Coast. (Lias ?)
<i>Acrosalenia</i> sp.	S.W. Madag. (Lower Oolite.)
<i>Stomechinus</i> (allied to) <i>bigranularis</i> , Lamarck	
<b>Brachiopoda.</b>	
<i>Lebratula</i> <i>maxillata</i> , J. de C. Sowerby	W. of "Ankarâmy, " near N. W. " Coast. (Lias.)
<i>Valdheimia</i> <i>perforata</i> , Piette	Near Ankoala, N.W. Madag. (Lower Oolite.)
<i>Rhynchonella</i> (allied to) <i>variabilis</i> , Schlotheim	
" " <i>plicatella</i> , J. de C. Sowerby	W. of "Ankarâmy, near Anôrontsanga, N.W. Coast, and S.W. Madag., about Môrondava. (Lias and Lower Oolite.)
" <i>tetraëdra</i> , J. Sowerby	

*Rhynchonella obsoleta*, J. Sowerby

" *concinna*, J. Sowerby

### Pelecypoda.

*Alectryonia (Ostrea) gregaria*, J. Sowerby

*Ostrea Sowerbyi*, Morris and Lycett

*Perna mytiloides*, Lamarck

*Pteroperna costatula*, Deslongchamps

*Modiola imbricata*, J. Sowerby

*Cypicardia rostrata*, J. Sowerby

" (*allied to bathonica*, d'Orb.

*Pholadomya ambigua*, J. Sowerby

*Ceromya concentrica*, J. de C. Sowerby

*Opis (allied to) trigonalis*, J. de C. Sowerby

*Lucina Bellona*, d'Orb.

*Myopsis dilatatus*, Phillips

*Astarte (allied to) angulata*, Morris and Lycett

" *excavata*, Sowerby

" (*allied to depressa*, Münster

" " *alta*, Goldfuss

" " *Phyllis*, d'Orb.

" " *minima*, Phillips

" ? *Baroni*, R. B. Newton

*Sphæra madagascariensis*, R. B. Newton

*Nucula ovalis*, Zieten

### Cephalopoda.

*Belemnites Sauranausius*, d'Orb.

*Perisphinctes (Ammonites) polygyratus*, Reinecke

*Stephanoceras (Ammonites) macrocephalum*, Schlotheim

" " *Herveyi*, J. Sowerby

" " *calloviense*, J. Sowerby

*Ammonites fimbriatus*, d'Orb.

" (*allied to heterophyllus*, Sowerby

" " *Parkinsonii*, Sowerby

*Rhyncholites (allied to) gigantea*, d'Orb.

### Gasteropoda.

*Nerita Buignieri*, Morris and Lycett

*Nerinea (allied to) Endessi*, Morris and Lycett

" " *Voltzii*, Deslongchamps

" *leiogyra*, Fisch.

" sp.

*Natica (allied to) intermedia*, Morris and Lycett

" " *canaliculata*, Morris and Lycett

" " *Verneuli*, d'Arch.

" " *cincta*, Phillips

" " *Clio*, d'Orb.

" " *dubia*, Römer

*Cerithium (allied to) eribote*, d'Orb.

" " *Russienne*, d'Orb.

*Alaria* sp.

S.W. Madag., about Morondava.  
(Lower Oolite.)

" (Fuller's Earth.) "

Near Ankoala, N.W. Madag. (Lower Oolite.)

Near Iraony, N.W. Coast. (Lower Oolite.)

Iraony, N.W. Coast. (Lower Oolite.)

Two or three miles N. of Ambohitrombikely, near Mojanga, N.W. Coast. (Lower Oolite.)

One or two miles S. of Ambohitrombikely, near Mojanga, N.W. Coast. (Lower Oolite.)

Two or three miles N. of Ambohitrombikely, near Mojanga, N.W. Coast. (Lower Oolite.)

Iraony, N.W. Coast. (Lower Oolite.)

" " "

" " "

" " "

" " "

S. W. Madag. about Morondava,  
(Lower Oolite.)

" " " (Oxfordian.)

" " " (Lias.)

" " " (Oxford clay.)

" " " (Great Oolite.)

Ankoala, N.W. Madag. (Lower Oolite.)

S. W. Madag. (Lower Oolite.)

S. W. Madag., about Morondava. (Lias.)

N. of Andranosamonta, N. W. Coast.  
(Oxfordian.)

" " "

" " "

S. W. Madag. (Lower Oolite.)

Five or six miles S. of Ankaramy,  
near Anorontsanga, N. W. Coast.  
(Callovian.)

S. W. Madag., about Morondava. (Lias.)

" " " (Lias.)

" " " (Lower Oolite.)

" " " (Oxfordian.)

Near Ankoala, N.W. Madag. (Lower Oolite.)

S. W. Madag. (Lower Oolite.)

Near Ankoala, N. W. Madag. (Lower Oolite.)

S. W. Coast, Tulleary.

S. W. Madag.

Iraony, N. W. Coast. (Lower Oolite.)

S. W. Coast, about Morondava.

(Great Oolite.)

Iraony, N. W. Coast. (Lower Oolite.)

S. W. Madag. (Oxford clay.)

" (Kimmeridge.)

" (Oxford clay.)

About Morondava, S.W. Coast. (Oxfordian.)

" " "

" " "



*larium* (allied to) *polygonum*, d' Arch.  
*rochus* (allied to) *Ibbotsoni*, Morris

S. W. Madag. (Great Oolite.)  
 About Morondava, S. W. Madag.  
 (Great Oolite.)

R. B. (Ed.)

#### APPENDIX.

"There is still another form of *Arius* (*A. Baroni*) otolith to which I should like to call attention. Among the fossils brought from Madagascar by the Rev. R. Baron, and noticed in his paper read before the Geological Society (Mar. 6, 1889), were some small otoliths which he had collected in the village of Ankoala, where they occurred in some numbers scattered over the surface of the ground. These otoliths bear such a resemblance to some of those from the Eocene beds of Barton, that they not unnaturally led to the supposition that they also were of Eocene age; but both these forms (described in the preceding pages) are referable to the living genus *Arius*, which is a widely distributed tropical form, and it seems very probable, therefore, that the Ankoala specimens may prove to be of much more recent origin, and the peculiar condition under which they were found seem to point to their belonging to a living species." (*Extract from a paper by Mr. E. T. Newton on some Eocene Siluroid Fishes in the Proc. Zool. Soc. April 2nd, 1889.*)

#### THE ROCK OF ANTANANARIVO.

ANTANANARIVO, the Capital of Madagascar, stands on a comparatively narrow ridge about two miles in length, its highest point being 500 or 600 feet above the plain below. The strike of the rock on which the city is built runs in an approximately north-west and south-east direction, its dip, which is to the north-east, varying from 50° to 80°. The ridge itself runs north and south, and therefore does not quite correspond with the strike of the strata. It is owing to this peculiarity that the layers of the rock of the Ampamari-nana precipice, when viewed from the west, seem to decline somewhat to the north. This might be erroneously taken for the dip of the strata. It may be illustrated thus: suppose a book, held at a high angle slanting downwards to the north-east, and pointing in a north-west and south-east direction, were to be cut through vertically by a knife drawn from north to south, the edges of the leaves would then appear to dip down to the north.

The rock of which the ridge is composed (and it may be taken as a fair representative of the greater part of the rock of Central Madagascar) belongs to the series of crystalline schists, and is almost certainly of Archæan age. It is a medium-grained and, for the most part, bluish-gray *Gneiss* or, more strictly speaking, *Granitite-gneiss*. It is generally of granitoid texture, the foliation being for the most part indistinct, though in some places fairly well marked. Here and there the hard unaltered rock comes to the surface, but generally the uppermost layer exhibits various degrees of weathering, from the slightly decayed, softish, light-coloured rock used in building, to the completely decomposed soil, which in some places reaches a depth of fifty or sixty feet or probably more.

The essential constituents of the rock are felspar, quartz, hornblende and mica; the accessory constituents being magnetite, iron pyrites, apatite, sphene, augite and zircon.

The microscope reveals the character of the rock to be as follows. The felspar constitutes probably about two-thirds or possibly three-fourths of the rock. It is generally more or less kaolinized, and frequently presents a clouded appearance, which, with high magnifying powers, resolves itself into very numerous needles of apatite generally running parallel along definite planes, minute crystals of sphene, and microscopic dust. Of this felspar there are various varieties, of which orthoclase is much the most abundant. It is, however, not orthoclase pure and simple, but orthoclase intergrown with plagioclase, and is what is known as micropertite. Nearly all the

orthoclase exists in this form, the banded or foliated appearance of which produces, if the section be not too thin, a very pretty effect in polarized light. Plagioclase also occurs independently of the orthoclase, its small extinction angle pointing probably to its being oligoclase. Microcline is also often abundant, and is probably more so than the plagioclase, manifesting itself by its characteristic cross-hatched appearance like a Scotch plaid. Small patches of it are occasionally enclosed in the orthoclase.

Quartz is the next most abundant mineral, occurring, like the felspar, in irregular grains. It is often crowded with solid inclusions, and contains also abundant minute cavities filled with gas or fluid, and occasionally detached fragments of the other minerals.

Hornblende exists in greater quantity than the mica. It is olive-green in thin section, and occurs in irregular grains, and possesses all the characters of common hornblende.

The mica is a lustrous form of biotite. It possesses a small axial angle (almost uniaxial), and is strongly pleochroic in the usual colours. It occurs in lamellæ and irregular patches. White mica is completely absent, hence the rock is a *Granitite-gneiss*, or in full, *Hornblendic granitite-gneiss*.

The most abundant accessory mineral is magnetite, but as is to be expected in such an acidic rock, it does not exist in large amount, each microscopic section only presenting a few grains. Its amount is, however, when oxidized, sufficient to give a reddish tint to the soil formed of the decomposed rock.

Iron pyrites occurs here and there, but generally lining small fissures.

The apatite, which is colourless, or of an extremely pale green tint, appears as small hexagonal or rounded crystals, chiefly included in the felspars, as noticed above.

The sphene is of a fox-red colour, and is seen in sharply defined minute crystals, ranging between the dimensions of  $\frac{1}{800}$  to  $\frac{1}{5000}$  of an inch in length. They vary extremely in shape, the more predominating forms having acutely rhombic, hexagonal, or prismatic outlines. They occur in all the felspars, though not in all the individual crystals, being sometimes very abundant, especially in the orthoclase, and are not infrequently arranged in rows like strings of beads, but seem to bear in their distribution no definite relation to the crystal form of their host. As a rule, however, the felspars are quite free from these inclusions. This mineral also occurs in isolated good-sized grains sparsely scattered through the rock.

A few grains of bright green augite may occasionally, though rarely, be seen.

Small zircons may frequently be found embedded in the other minerals.

Besides the above minerals, calcite may sometimes be seen occupying minute cracks in the rock, which cracks pass continuously through contiguous crystals of the same or different minerals. It is of course a secondary product, derived from the other constituents.

Quartz veins may be seen in various places in the Capital, some of which appear to be auriferous, as gold has been found not only *in situ*, but also in the alluvial sand lying on the road.

There are also at least four dykes that traverse the rock of Antananarivo, all of which contain different rock species. One of these occurs at Isôtry. It is about a couple of yards in width. It crosses the road near the Prime Minister's tomb in an approximately north-east and south-west direction. The rock, being hard and unweathered, is much used at the present time for the foundations of houses, the portion of the dyke to the north of the road being quarried for this purpose; but by and by the accessible material will be worked out, unless indeed the natives follow it under the rice-fields, where at present it is hidden from view. This rock is a *Granite*, or correctly speaking, inasmuch as it contains a notable quantity of hornblende, a *Hornblendic granite*. It is of granulitic texture and somewhat fine grain. It consists of quartz, felspar (orthoclase and plagioclase), green hornblende, bio-

ite and muscovite. As accessories there occur magnetite, apatite, and zircon. The plagioclase occasionally occurs in somewhat large ill-defined crystals, showing not only the ordinary multiple twinning, but twinning also on the Carlsbad type. The hornblende and the biotite occur, as a rule, in association, hornblende being the more abundant of the two. Muscovite exists in very small quantity. The apatite is abundant in the form of good-sized prisms and minute needles.

At Imariivolänitra there is also a dyke, running in a north-easterly and south-westerly direction, of perhaps three or four yards in width, which is occupied by a black compact rock, having the external aspect of basalt. It occurs in the hollow immediately to the north of the Printing Office. Looked at in mass, it is seen to be more or less distinctly schistose. This character comes out very clearly when viewed under the microscope, and is to be explained by the intense pressure or nipping to which the rock has been subjected after its injection from below into the fissure, inducing a foliated structure, the planes of schistosity lying parallel to the walls of the dyke. So great indeed has been the stress exerted on the rock that its constituent minerals (quartz, feldspar and black mica) have been crushed, torn asunder, and otherwise altered. Both the quartz and the feldspar crystals have, as a rule, been drawn out and crushed to such an extent as to present, almost in every instance, the mosaic appearance known as aggregate-polarization under crossed nicols. Portions of the original crystals that have escaped the crushing may be seen here and there, giving to the rock an almost porphyritic appearance. Both monoclinic and triclinic feldspars occur, the latter showing the characteristic polysynthetic twinning, both varieties being largely changed to kaolin. The mica, a form of biotite, runs in wavy more or less parallel lines through the rock, between which the quartz and feldspar mosaics occur. Grains of iron ore, probably magnetite, are scattered through the rock, and small crystals of zircon are somewhat plentiful. The rock contains the constituents of granite, but owing to its superinduced foliation, it is now a *Granite-gneiss*.

A third dyke (or possibly a small boss) occurs in an almost inaccessible spot close to the foot of the Ampamarinana precipice, at the west side of the city. The rock is a *Diorite*; it is of a dark colour and of medium texture. Its chief constituents are plagioclase and hornblende. Under the microscope in polarized light the section, if not too thin, is extremely beautiful. The plagioclase frequently shows twinning both on the albite and pericline types. The hornblende, which is green in thin section, constitutes probably a third or a fourth of the total bulk of the rock. Small rounded grains of red garnet occur very abundantly in the rock.

Crossing the road about fifty or sixty yards to the north of the F.F.M.A. Printing Office at Fàravòhitra there is another dyke two or three yards in width, running in an easterly and westerly direction. Where the rock appears at the surface, it is much decayed. It is of medium granitic texture, and is composed essentially of the minerals plagioclase and diallage, the rock therefore being *Gabbro*, or, inasmuch as it also contains quartz, *Quartz-gabbro*. The plagioclase is very much more abundant than the diallage. It has under low powers a clouded appearance, like the feldspar of the rock which it traverses, the cause of which has already been explained above. Judging from the extinction angles, it appears to belong to one of the soda feldspar series. The diallage occurs in irregular grains, and is largely occupied by iron ore. A little green hornblende, black mica, zoisite, and iron ore occur as accessories.

It may be briefly mentioned here that in the immediate vicinity of Antanarivo two kinds of rock occur of considerable interest: one of these is a *Mica-schist*, which may be seen in the glen (*hàdy*) at the north foot of

Ambôhijánahàry (where also lumps of magnetic iron are abundant). This rock contains numerous bright red garnets, but its chief peculiarity is that it contains fibrolite in abundance, and a few grains of green spinel (pleonaste?).

The second rock is a *Hypersthene-norite-schist*, which comes to the surface on the southern edge of the rice-fields in the valley immediately to the north of the new hospital.

R. B. (ED.)

#### THE AGE OF MADAGASCAR AS AN ISLAND.

"THAT this part of the island (the eastern and central) has been above the sea for an immense period is shown by the fact of its rocks having supplied the material which formed the extensive Jurassic, Cretaceous, and Eocene beds to the west, which lie on them unconformably, as also by the extensive denudation they have undergone. It may therefore confidently be said that the eastern half of the island has been dry land at least since early Mesozoic times. The forces which have elevated the island have probably been chiefly concentrated on the eastern side. This is shown by that side being much steeper than the western, and by the fact that the dominant dip of the rocks is towards the west. Further investigation will almost certainly reveal the existence of numerous faults running in a direction parallel with the east coast of the island. One of these faults not improbably exists at the western edge of the great Ankay and Antsihanaka plains, and another about long. 47°. If we may take the fringing coral-reefs,\* which surround the island for the most part, as implying non-subsidence, and the absence of ancient sea-beaches or recent marine deposits near the coast as implying non-elevation, we may conclude that the island generally is at present stationary. It appears, however, that the southern part of the country has undergone recent elevation. This is shown by the existence of extensive coral-beds, to the accumulation of which, M. Grandidier says, the southern part of the island seems to be due. Capt. Larsen says that raised beaches may be seen in certain parts of the south-west of the island, and Mr. Sibree informs me that he met with them to the south-east.

"Another question of interest is, at what period, if ever, was there a land connexion between Madagascar and Africa? That the island once formed part of the mainland cannot well be doubted when we remember the relationship existing between the faunas, and the close affinity between the floras, of Madagascar and the adjacent continent. If we accept Mr. Wallace's theory as correct, that the character of the Madagascar fauna points to the separation of the island from the mainland previous to the migration into Africa from the Euro-Asiatic continent of the higher forms of mammals, then it follows that Madagascar became an island at least not subsequent to the later Pliocene period (for the migration probably took place in

\* Mr. Wallace, in his *Island Life*, p. 386, says:—"We have also evidence that it (Madagascar) has recently been considerably larger; for along the east coast there is an extensive barrier coral-reef about 350 miles in length and varying in distance from the land from a quarter of a mile to three or four miles. This is good proof of recent subsidence; while we have no record of raised coral rocks inland which would certainly mark any recent elevation, because fringing coral-reefs surround a considerable portion of the northern, eastern, and south-western coast." From this it would seem that both *barrier* and *fringing-reefs* are found on the east coast. But, if I am not greatly mistaken, these reefs are, at any rate for the most part, *fringing-reefs*. As for the raised coral rocks, there are such in the south-west of the island to the north of the river Onilahy, about twenty miles inland on the road to Manja; in fact they exist, it seems, throughout the southern part of the island. On some parts of the east coast the sea has recently but gradually receded several miles, but this seems owing to the heaping up of the sand by the sea, aided by the wind, rather than to elevation of the land. Sand and pebbles thus left by the sea may be seen as far inland as the foot of Manjakandrianombana, some four or five miles west of Tamatave.

early Pliocene times, if not even in later Miocene), since which it must have remained isolated from the mainland until the present day, as the absence of such mammals proves.\* Moreover, during a portion, at any rate, of Eocene (as also of Jurassic and Cretaceous) time, the western part of the island was beneath the sea, a fact shown by the presence of almost continuous nummulitic limestone on the west coast. From these considerations we may conclude that Madagascar was probably connected with Africa during some portion or portions or the whole of the time between the Eocene and at least the later Pliocene period† (allowing time for the migration of the mammals to Southern Africa, which would not unlikely keep pace with the gradual refrigeration of the northern hemisphere), after which the sea again divided it from the adjacent continent, and has kept it isolated to the present day." (*From a paper read by R. Baron at the meeting of the Geological Society of London, March 6, 1889.*)

#### REMARKABLE ROCK-CAVITIES.

A somewhat remarkable natural phenomenon in the form of a large hole exists in a rock visible from the Ambatovòry sanatorium. It may be localized by carrying the eye north from the village of Ambatokèly to the rice-fields on the hillside of Ambòhijàhana. A huge mass of rock stands exposed at the head of one of these, just under the summit of the hill, and is streaked with dark lines of black lichen, which make it a prominent object in the landscape. Immediately under this and to the left is seen the rock we are to describe—a large mass jutting out of the hillside and exhibiting about the centre of its face the hole in question. On going across the valley to make a closer inspection we found the rock to be granite, and the hole was so high up that the poles of the palanquin placed endwise on the ground just reached the bottom of it. Making use of this as a ladder and invoking the aid of the bearers, we struggled up and entered the hole. We found that what appeared at a distance to be one hole was in reality divided into two portions by a projecting horizontal slab, and these again formed eight divisions of varying size. Their walls were not smooth and continuous, but were divided into no fewer than thirty-six small holes, the average size of which was such that they could contain a man's head. In parts they somewhat resembled a honeycomb in appearance, the holes being deep and close together. One noticeable feature in all these holes was their remarkably rounded outline, as though they had been scooped out by water like pot-holes. In certain places we noticed a white dust on the surface, which possessed an alkaline taste, and was thought to be probably a potash salt separated out during the process of weathering.

We measured the hole as well as we could and found the dimensions to be as follows: Width at the mouth, 10 feet; greatest height, 12 feet; greatest depth, 9 feet. It was computed that at least 20 men could be stowed away in the various parts of the hole.

This cavity could not have been made by human agency, and that it should be a pot-hole formed in the bed of a river is altogether out of the question. It

\* That Madagascar has for a very long period been separated from the mainland is also proved by the character of its flora; for while about five-sixths of its genera of plants are found in other (chiefly tropical) countries, three-fourths (if not a larger proportion) of its species are peculiar to the island. This shows that a very lengthened period of isolation must have elapsed to have allowed of such a large amount of specific differentiation.

† This would seem to be confirmed by what we know respecting the Lemurs, the Centetidae, and Civets, which groups compose about five-sixths of the Madagascar Mammalia, and the ancestors of all of which existed in Europe in early Tertiary times. It must have been posterior to the Eocene but anterior at least to the Pliocene (or later Miocene) period (when the large animals were driven southward) that these lowly organized creatures spread as far as Madagascar, the existence of which in the island is unaccountable except on the theory of a former connexion with the mainland.

occurs, it must be remembered, in the face of a vertical rock *in situ* on the hill-side, and would seem to be due to the fact that a readily decomposing material, probably felspar, chiefly occupied the space now left vacant. This would not be able to stand weathering as well as the harder quartz, and thus would more readily disappear. Mr. Baron seems to think this the most probable explanation. It may be added that at the foot of the valley there is another stone, in the face of which are two holes, each about the size of a very large bee hive, which may be explained in the same way.

C. F. A. MOSS.

The following notes on other similar cavities occurring in the same neighbourhood have been penned by Dr. Fenn:—

*First Hole.* This is on the east side of Ambòhibóry, about half way up the mountain, in a huge mass of granite. The entrance is 3ft. 10 in. high and 2ft. 5 in. wide, and of a rounded shape. The interior, measured at its greatest height, is 5ft. 2 in., its depth 4ft., and width 4ft. 10 in. It is irregular in shape and contains thirteen or fourteen lesser hollows or depressions inside. The rock is a coarse granite with a black lustrous mica and numerous large crystals of orthoclase felspar scattered porphyritically through it. In this cavity the walls are more or less weathered. Several solitary mason-wasps' nests are found adhering to the roof.

*Second Hole.* This is on the same side of the hill, a little further south, in a large round mass of granite. A piece of the wall of the cavity has apparently fallen away from the thin front on the left side, so that there are now two entrances. The larger is 1ft. 9 in. high and 2ft. 4 in. wide. The smaller is 1ft. 6 in. high and 1ft. wide. The maximum height of the interior is 1ft. 6 in., the width 3ft. 10 in., and the depth 3ft. The rock is of the same nature as the above, but not so much weathered. The cavity shewed signs of three or four secondary nest-like depressions.

*Third Hole.* This is situated a little further to the south, on the same side of the hill and is perhaps the most remarkable of all, having a comparatively small entrance, and extending in an upward direction a considerable way. The mouth of the cavity is about 2ft. wide and 2ft. high, but somewhat irregular in shape. The interior measures at its greatest height nearly 3ft., is 2ft. wide and 5ft. 5 in. deep. In the large cavity there are six or seven lesser ones.

There is a fourth hole a few yards further south on the under side of a partly overhanging mass of granite. It is small and contains three or four minor depressions. Further south again there are more cavities of the same character as the above.

On the higher mountain of Ambòhitsilèo there are at least three cavities similar to the above, one perhaps larger than any mentioned. One is on the north, one on the west, and one on the north-west side of the mountain. I had not time to examine these.

A large cavity is also to be seen on the north side of Angávokèly.

S. B. FENN.



## THE METEOR AND THE MAGIC LANTERN.

The Sihànaka natives had been for several days expecting some unearthly phenomenon, and were looking for it in a decidedly excitable frame of mind about 6.30. p.m. on Tuesday, 2nd September. Word had gone forth among the missionaries and the Antsihanaka Church Conference that a *Fanàla àga* (Magic Lantern) would be exhibited at that time in the church of Androso on the shore of Lake Alaotra. After various speculations among themselves as to what the magic lantern might prove to be, the natives went forward to the evening of 2nd September with no little awe, certainly a considerable amount of intense curiosity, many having never seen a lantern before.

We appointed time Mr. and Mrs. Mackay and I were on our way to Androso to exhibit the lantern, and we could see a great crowd already gathered outside the church awaiting our arrival. As the time had now come for the long-expected phenomenon, excitement had risen to a very high pitch, and word went through the crowd: "The Vazaha are coming with the magic lantern!" At that moment a very large meteor, the largest I ever seen or heard of, appeared and so near as to give the idea of great brightness. It looked like a comet rushing through the air, and it quickly ended with a mild explosion as it approached the forest. Had the time been instead of twilight the effect of this remarkable phenomenon must have been intensified.

Arriving at the church within two minutes after the event, we found the crowd much less than expected. The natives apparently were prepared for the shock by their anticipation of the magic lantern, for as many of the Antsihanaka gazed upon that wondrous meteor they exclaimed: "*Behold! the Lantern show is begun!*"

E. H. STRIBLING.

## BRIEF SUMMARY OF IMPORTANT EVENTS IN

### MADAGASCAR DURING 1890.

**New Anglo-French Treaty.** A month ago, when there was a readjustment and settlement of territorial claims in regard to the African Continent, Madagascar was naturally for a share of attention. Since there never was formal recognition on the part of the British Government of the new relationship between France and Madagascar as expressed by the last Malagasy treaty, the French Government seized the first opportunity for securing England's sanction for recently acquired rights in Madagascar. A treaty was therefore concluded between the two powers,

which vitally affects the future of this country. We here simply give, without comment, the text of the treaty:—

"Her Britannic Majesty's Government recognises the French Protectorate, and its consequences, over the island of Madagascar, especially concerning the exequators of British Consuls and agents, which will have to be asked for through the medium of the French Resident-General.

"In the island of Madagascar the missionaries of both countries will enjoy complete protection. Religious tolerance, liberty of all worship and religious teaching will be ensured.

During last August several extraordinarily large and bright shooting stars were seen in Madagascar. It is well known that the earth, in its revolution round the sun, crosses the paths of numerous systems of meteorites. One of these systems it traverses in the month of August. This year, many of the large members of these bodies have been seen from their course and drawn to the earth, at any rate, to this part of it. These large stars are known by the Malagasy as *Fanàlana* and are dreaded as evil portents.—EDS.

"It is well understood that the establishment of this protectorate cannot impair the rights and immunities which the British subjects were enjoying in that island."

**Robber Bands.** It was remarked in the last number of the *ANNUAL* that the country was in a very disturbed condition in consequence of the numerous attacks upon outlying villages made by large bands of armed robbers. During the present year, we are sorry to say, these raids, instead of diminishing, have multiplied to a fearful extent. Many parts of the island indeed seem almost to be in a state of anarchy and chaos, and given up to rapine and murder. Within the last twelve months, hundreds of villages have been ravaged, and thousands of the natives have been either barbarously murdered or carried into slavery. The object of all this is plunder. Now this state of things is not owing to pure native viciousness, but to misrule and oppression. In consequence of the compulsory unpaid Government service, and especially in relation to gold digging, large numbers of people have been reduced to the most utter destitution, and have been obliged to turn highwaymen in order to get a living. Under normal healthy conditions the great bulk of these men would be industrious citizens, but it pays them better to

"take to the road;" and so many honest men, out of sheer self-preservation, have been converted into murderous brigands. We are glad to note, however, that recently the Government has taken a step in the right direction in doing away with *fanompiana* as far as gold-digging is concerned; but the evil nevertheless must continue to exist so long as the blighting influence of unpaid state service endures.

As it would be impossible for properly organized armed bands to commit their depredations within the immediate neighbourhood of the Capital, the disease has taken the form of burglary. It is impossible to get statistics, but from such incidents as come to light, it would seem that a night scarcely ever passes without some case or cases of house-breaking occurring, not infrequently accompanied by murder. Indeed, even in the Capital itself, the state of things in this respect has recently become quite alarming. Not long ago the thieves entered the Monastery at Andohalo, and commenced a murderous attack with a large knife on one of the priests. During the month of November six or seven European houses were broken into within a fortnight. We hope the Government will soon take steps to bring about a better state of things.

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### METEOROLOGICAL NOTES TAKEN ON THE SOUTH-EAST COAST.

**FARAFANGANA** or Ambàhy, one of the few ports on the east coast south of Mānanjara, is situated in S. Lat. 22° 49' and E. Long. 47° 58'. It is enclosed on two sides by rivers of considerable volume which join to form a large lagoon between the town and the sea, and separated from the sea by a small bank of sand, which is constantly shifting, according to the relative strength of the two rivers and the force of the waves that break outside. Hence the opening to the sea is at one time in one place, at another time this is filled with sand, and the rivers break through at a spot which may be half a mile distant from the previous opening. At times each river forces a passage for itself in a line with the lower part of its course, leaving the bank of sand between as the eastern boundary of the lagoon. These openings, however, are always shallow, impeded with rocks and sand bars upon which the sea breaks with considerable violence. Close in shore the southern half of the equatorial Indian Ocean current runs towards



he south, at times with great rapidity. This extends to about 60 miles to the east, and naturally has its influence both on the climate and the wind, the latter blowing for days from the north or north-east, while at over 60 miles from shore only southerly winds have been met.

On the west of the town are one or two swamps of sufficient extent to affect somewhat the climate of the place, and this factor, taken in conjunction with the large extent of forest immediately adjoining and extending towards the west, materially absorb, by the rapid evaporation during the night, the heat accumulated during the day. More especially so, as a land breeze blows with few exceptions every night throughout the year, springing up soon after sunset and continuing until 9 or 10 o'clock the next day. The exceptions depend entirely upon the strength of the wind during the day, especially if it is a southerly wind, which often continues to blow throughout the night from the same point.

The subjoined observations (from Aug., 1889—July, 1890) have been taken in accordance with the instructions issued by the Royal Meteorological Society of London, with the exception of the barometer, an aneroid having been used instead of the usual standard barometer. The dry bulb thermometer, the wet bulb thermometer, and the maximum and minimum thermometers are mounted in a Stevenson's screen four feet above the ground covered with grass; the black bulb thermometer *in vacuo* has the same elevation; the minimum thermometer for terrestrial radiation is placed over short grass with the bulb just touching the tips of the blades.

Another variation from the Royal Meteorological Society's instructions is in the time of the second observation, which has been taken at 3 p.m. instead of 9 p.m., because both at 9 a.m. and 9 p.m. the land breeze is often blowing, and unless a third observation is added or the later time altered, the main characteristics of the day are missed.

The barometer has ranged from 29.94 in. on March 3rd to 30.67 in. on August 21st. 1889. The barometer stood highest during the previous August of any month in that year.

The greatest heat in the shade in a clear current of wind was 94° on January 7th. Three times in the same month 93° were registered, and ten times during the year the mercury stood at 92°. The greatest heat of the direct rays of the sun, as tested by the black bulb thermometer *in vacuo*, was registered on January 7th, when the mercury stood at 164°.

The lowest minimum of the air four feet from the ground was noted on November 7th, when after a drizzling afternoon the thermometer fell to 50° during the night.

The lowest record of intensity of terrestrial radiation was on July 30th, when 40° were registered.

Rain fell on 181 days during the year; the greatest amount in any single day of 24 hours fell on January 30th, when 6.73 inches were measured.

The total rain-fall for each month has been as under:—

August	13.70 inches	February	25.14 inches
September	3.60 "	March	24.60 "
October	4.59 "	April	6.31 "
November	1.50 "	May	9.60 "
December	11.96 "	June	13.37 "
January	24.00 "	July	6.97 "

making a total of 145.34 inches for the year.

The wind, at time of observation, viz. either 9 a.m. or 3 p.m. or both was blowing:—

Between N. & E. including N.	on 158 days.
" E. & S.	" E. " 134 "
" S. & W.	" S. " 40 "
" W. & N.	" W. " 62 "

The great majority of the westerly winds were registered at the 9 a.m. observation and represented the land breeze.

The following are the averages for each month.

At 9 a.m.										At 3 p.m.									
	Barometer, Inches.	Thermo- meter,		Force of wind, 0-12.	Amt. of cloud, 0-10.	Rainfall, Inches.	Barometer, Inches.	Thermo- meter,		Force of wind, 0-12.	Amt. of cloud, 0-10.	Max. in shade,	Min. in shade,	Max. in sun, black bulb in vacuo.					
		Dry bulb.	Wet bulb.					Dry bulb.	Wet bulb.										
August .....	30'51	72	62	2	3	.59	30'48	76	72	3	4	83	58	128					
September...	30'41	74	70'9	2	3	.12	30'38	79'4	72	3'4	3'8	83	57	132					
October ...	30'39	77'8	73'9	2	4	.14	30'36	80'7	74'4	3	3	83'8	61'2	136					
November ...	30'29	83'4	78'6	2'6	3'4	.05	30'25	85'3	80'2	3'7	3	87'3	64'6	143'5					
December ...	30'23	84'7	79'7	2'7	4'6	.39	30'17	86'3	80'8	3'7	5'9	89'2	67'3	144'5					
January ...	30'25	83	78	2'4	4	.85	30'21	84'8	79	3'9	4'5	88'4	70'6	148'9					
February ...	30'23	82'8	78	2	7	.89	30'19	84	79	3	4	87	71	144					
March .....	30'34	82	78	2	3	.79	30'21	84	80	3	4	87'4	73	144					
April .....	30'31	83	78	2	4	.26	30'29	84	79	3	4	86	67	139					
May .....	30'36	77'7	72'3	3	4	.30	30'34	79	73	4	4	84	60	131					
June .....	30'44	72'3	63	2'8	3'8	.44	30'41	78'4	71'9	3	4'7	80'6	57	127					
July.....	30'45	74'3	69'6	3	4	.22	30'43	77'8	72'7	3	4	80'4	57'7	130					

## DAILY TABLES OF THE TEMPERATURE AND RAINFALL FOR 1890.

THE tables on the following pages are the records of observations made in the L.M.S. College grounds at Fàravohitra in Antananarivo, 4700ft. above the sea. The first column shows the rainfall for the 24 hours previous to 8 a.m. of the morning of the day, while the second column (minimum) shows the starting or lowest point of the thermometer before sunrise, and the third the average for four years. The fourth shows the highest point reached during the day, and the fifth the average for four years.

It will be noticed that the lowest point touched was 39° on the 27th of July, and the highest has been 81° Fahrenheit.

In the rainfall it will be noticed that while January, February and March were below the average, the three months at the end of the year were above, and in April we had a remarkably high record—the highest by far for ten years. In the afternoon of October 20th. a very heavy hail-storm passed over the Capital, and at the south of Màndrosôa, a village about two miles north-east of the Capital, the strange sight was seen of a *white* down, reminding one of a snow-clad hill at home. It is said that the hail was more than a foot deep.

We have only noticed one earth tremour, which happened at 1 p.m. on the 29th of March. The rainfall for ten years is as follows:—

1881=42.12in. ; 1882=41.08in. ; 1883=57.65in. ; 1884=68.86in. ; 1885=52.19in. ;  
1886=47.28 ,, ; 1887=65.08 ,, ; 1888=53.84 ,, ; 1889=49.61 ,, ; 1890=52.71 ,, .

Average for ten years=53.042in.

J. RICHARDSON.

# DAILY TABLES OF TEMPERATURE AND RAINFALL FOR 1890.

JANUARY.						FEBRUARY.						MARCH.						
Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.		Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.		Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.
	57	62.25	79	76.75		1	.13	61	63.75	78	77.5		1	57	61.5	72	76	
	60	61.75	78	73.5		2	.45	60	63.5	78	77.25		2	55	62	73	76	
	59	62.25	77	72.5		3		61	63.75	79	76.75		3	57	61.75	72	76.25	
	62	61.5	78	72.75		4	1.85	60	62.75	78	75.75		4	58	62.25	73	77.5	
	59	60.75	77	72.75		5	.02	62	62.5	78	76.25		5	60	62.5	76	76.25	
	59	60	76	74.5		6	.10	61	61.25	79	75.75		6	59	60.25	77	74.75	
	55	60.25	76	76		7	.08	61	61.5	77	77.75		7	.03	59	59.25	79	75.25
	58	62.25	75	73.75		8	.87	61	61.75	77	77.25		8	.25	60	60.75	76	75.5
	58	61.25	75	75.5		9	.49	59	61	74	76.25		9	.40	60.5	60.25	77	74.75
	59	61.75	75	75.75		10	1.30	60	61.75	74	76.25		10	1.30	60	60.75	76	74
	60	62.25	74	74		11	.34	60	62.75	78	77.25		11	60	60.75	73	75.25	
	57	61.75	74	73.5		12	.07	61	63	76	77.75		12	59	60.25	75	74.25	
.05	57	60.5	76	75		13	.11	60	62.25	74	77		13	60	60.5	75	73.25	
	57	61	77	74.25		14	.87	60	63.25	76	77.5		14	62	61.25	76	71.75	
	57	61.5	76	74.5		15		60	62.5	79	77		15	.22	61	60.75	74	76
	61	62	78	74.25		16	.01	60	61	77	76.5		16	.04	59	58.5	74	71.5
.21	59	60.75	78	74.5		17	.58	60	61.5	77	76.5		17	57	59.75	72	71.75	
.72	61	61.75	78	74.25		18		62	61.25	78	77.25		18	59	59.75	73	74	
.15	62	63	78	74.75		19	.21	62	61.75	76	77.75		19	.09	60	58.25	74	74
.92	61	63	78	75.5		20		59	61.25	77	75		20	.40	59	60.75	76	76
.65	61	62	75	75.25		21		62	61.5	79	76.5		21	.14	61	60.75	75	76.25
.15	61	62.5	77	77		22	.01	60	61.75	79	74.75		22	.90	60	61.75	75	74.75
.03	62	64.5	80	79.25		23	.06	59	61.25	75	74.25		23		61	60	72	71.75
	62	64.5	81	76.75		24		61	62.5	74	74.75		24		60	57.25	72	69.5
.84	58	63	81	77.5		25		57	61	73	74.5		25		55	57.5	73	70.25
.65	61	63.75	78	77.25		26		58	61.75	74	75		26		58	58.75	72	72.75
.93	61	63.5	78	77.25		27		59	61.5	75	75.5		27		58	59.25	72	73.25
1.35	60	63.5	75	75.75		28		60	62	72	75.75		28		58	59.75	72	73.75
.04	61	63.5	75	73.5									29		59	60.75	72	73.25
	60	63.25	77	76									30		59	59.75	75	72.75
.35	61	63.25	78	76.5									31	.37	57	59	69	70.75

ft.: 7.04in. Aver. 10yrs. 11.864in. 7.55in. Aver. 10yrs. 9.02in. 4.14in. Aver. 10yrs. 7.77in.

APRIL.						MAY.						JUNE.					
Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.		Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.	Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.
	60	58.5	70	71.25		1		53	55.75	65	68.25	1		48	51	62	64.25
.10	59	59.5	74	72.5		2	.01	55	56.5	64	67.5	2		47	49.5	59	63.5
.46	58	58.25	73	72.75		3		50	54.75	60	66.25	3		47	47.5	61	62.75
.18	59	57.75	74	72.5		4		51	53.5	61	66.75	4	.01	46	48.75	59	62.5
.59	58	58.75	72	71		5	.01	52	54.25	61	68.5	5	.01	49	49.5	59	63.5
.09	60	59.5	73	73		6		49	54.25	62	67.75	6		45	49.75	59	63.25
	59	59.75	75	72.5		7		52	55	63	67.75	7		46	47.5	59	61.75
	59	57	71	69.5		8		50	53	63	67.75	8	.01	44	45.25	57	61
.40	57	58	71	70.25		9		53	54.75	65	68.5	9		43	46.25	57	61.5
.03	55	57.75	70	70		10		53	54.75	67	68.5	10		46	47.75	58	62.75
.08	59	58	72	69.5		11		54	54	64	66.25	11		46	49.25	57	62.25
.90	55	58	69	69.25		12		47	51	60	65.25	12		41	44.5	56	59.5
.28	55	57.25	71	69		13		50	52.75	63	65	13	.01	41	47.75	56	59.5
.03	59	57	73	69.5		14		52	53.25	64	65.75	14		44	46.75	59	59
.39	59	57.5	73	70.25		15		51	53.5	63	65.75	15		43	46.5	58	57.5
.50	58	57.25	69	69.25		16		50	53.75	62	66.25	16		42	42.25	57	60.5
.01	58	57.25	69	69.75		17	.02	52	53.5	62	66.5	17	.01	45	45.25	58	62.25
	58	57	72	68.75		18		51	53	60	66.5	18		45	46.75	60	61.25
.37	58	56.5	70	67.75		19		50	53.25	64	67	19		42	45.75	56	60
.90	59	56	70	67		20		52	52.75	62	67	20		41	45.75	58	59.75
.59	59	55.5	71	69.25		21		53	52.5	64	67.75	21		43	47.75	59	61.75
	60	59	69	68.25		22		49	52.25	62	65.5	22		47	47.25	60	62.75
.25	50	57	71	69.75		23		49	51.75	62	64.75	23		45	48.75	61	62.25
	57	57	68	69		24		49	51.5	65	65.5	24		48	49.25	60	63
	56	55	67	69.25		25		50	50	65	65	25	.45	49	49.25	59	61.5
	55	55.25	69	69.75		26		50	49.75	64	65.75	26	.01	48	47.75	58	60
	56	55.75	67	70		27		48	50.5	66	66	27		49	48.75	61	60.25
	52	55.25	65	69.25		28		49	50.25	61	63.5	28		49	48.25	61	58.5
	52	54.5	65	68.25		29		52	51	64	64.75	29		50	48.25	60	59.25
	52	54.5	64	67.5		30		52	51.25	63	64	30		50	46.75	62	59.5
						31		50	50.25	61	64.75						

ft.: 6.15in. Aver. 10yrs. 1.995in. .04in. Aver. 10yrs. .69in. .51in. Aver. 10yrs. .34in.

# DAILY TABLES OF TEMPERATURE AND RAINFALL FOR 1883

JULY.						AUGUST.						SEPTEMBER.					
Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.	Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.	Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.
1		53	49	62	59.75	1		49	46	60	60.25	1	.01	47	48.5	60	60
2	.02	52	49.5	62	59.5	2		46	46	59	61.25	2		50	49.5	66	66
3		51	48	63	59.5	3		46	46	58	61.5	3		49.5	48.75	63	63
4	.03	51	48.25	63	61.5	4		47	47	60	62	4		47.5	48	60	60
5		52	49.75	62	62.75	5		45	47	60	61.75	5		49.5	49.5	62	62
6		51	50	61	60	6		44	47.5	58	61.25	6		49.5	50.25	64	64
7		52	48.5	60	60.5	7	.02	47.5	48	57	60.25	7		48	46.75	65	65
8		47	47.5	60	60.5	8	.03	46	46.5	56	60.5	8		49	47.25	65	65
9		43	46.75	60	61.5	9	.03	44	46.75	56	59.5	9		52	49.25	68	68
10		46	48	60	60.25	10	.02	42.5	46.5	58	59.75	10	.04	54	49.5	68	68
11		49	49	60	61.75	11		43	45	57	59.25	11		50	51.25	63	63
12		47	48.75	58	61.75	12		43	45.5	57	57.75	12		51	51.75	63	63
13		46	49	58	61.75	13		45	48	61	59.75	13	.01	48	50.25	61	61
14		49	47	59	62.25	14		50	47.75	64	60.75	14		45	48.75	61	61
15		48	47.5	59	63	15		54	50	67	62.5	15		46	49.45	61	61
16		47	48.75	59	62	16		54	47	65	62.5	16		47	49.25	65	65
17		48	48.25	60	63.25	17		54	49.5	63	62.5	17		45	47.5	62	62
18		48	49	59	62.5	18		51	48.75	62	63.5	18		44	47	64	64
19		47	47.75	62	62.25	19		42	45.5	60	63.25	19		47	47.25	67	67
20		48	47	64	61.75	20		45	46.25	68	64.25	20		49	48.25	60	60
21		47	46.75	61	61.75	21		50	49.25	64	61.75	21		46	48.75	61	61
22		47	48.5	57	59.75	22		48	48.75	62	61.25	22		45	50.75	63	63
23	.06	48	49	60	61.5	23		44	47	60	59.5	23		45	51	64	64
24		40	47.25	55	60.25	24		45	48	63	61.25	24		47	52.5	73	73
25		44	47.5	56	60.25	25		42	47	64	63.25	25		49	52	69	69
26		41	47	56	60.75	26		47	48.25	70	61.25	26		47	51.25	65	65
27		39	46	58	61.75	27		49	49.75	72	66	27		47	53.5	65	65
28		43	47	60	60.75	28		51	51.75	65	65.25	28		49	53	71	71
29		43	47.25	58	60	29		46	50	67	65.25	29		50	53.75	65	65
30		44	46.75	59	60.75	30		51	49.75	65	64.5	30	.01	51	55.25	65	65
31	.01	48	46.25	60	61.25	31		50	48.75	65	64.75	31					

Tot.: .12in. Aver. 10yrs. .183in. .10in. Aver. 10yrs. .18in. .07in. Aver. 10yrs.

OCTOBER.						NOVEMBER.						DECEMBER.					
Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.	Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.	Date.	Rain.	Min.	Aver. 4 yrs.	Max.	Aver. 4 yrs.
1		47	55	66	72	1		55	56.75	73	75.5	1	.02	58	57.75	73	73
2		49	55	75	74.25	2		57	56.25	75	75	2	.24	58	58.75	71	71
3	.14	53	54.25	74	69	3		58	57	76	77.75	3	.87	57	57.25	69	69
4		50	52	70	67	4		59	57.5	73	76.25	4	.14	55	58	68	68
5		47	51.5	70	69.25	5		52	56.75	70	77.75	5	.14	56	58.25	76	76
6		48	52	68	67.5	6		50	56.75	67	77.75	6	1.12	57	58.25	75	75
7		49	51.5	66	67	7		50	56	73	76.75	7		57	58.75	75	75
8		48	51.25	70	70.25	8		55	58.25	73	76.25	8		57	57.5	74	74
9	.43	54	53	78	72.5	9		56	58.25	72	74.75	9		57	58.25	75	75
10		56	55.25	74	68	10		52	55.5	71	72	10		57	59.75	80	80
11	.04	54	54.25	73	70.75	11		56	55.75	75	73.25	11	2.90	58	58.5	80	80
12		54	53.75	69	69.25	12	.03	57	56	75	74	12	2.15	62	60.5	78	78
13		54	54.5	69	70.25	13		58	55.5	75	73.75	13		57	57	81	81
14	.02	56	54.75	76	72.75	14		58	56.25	76	77	14	1.63	55	57.25	75	75
15	.22	56	56.75	73	76	15		58	58.25	76	75.25	15	1.08	59	60	74	74
16	.80	50	56.5	74	75.5	16		60	58	79	78.25	16		57	58.5	73	73
17		55	56.75	64	70.25	17	1.34	58	58	77	74.25	17		58	60	71	71
18		50	54.25	66	68.75	18	.81	61	59.75	80	77.75	18	.03	59	60.25	70	70
19		52	56	59	67.25	19	1.47	58	57	78	78	19		57	58.75	65	65
20	.90	52	53	75	72.5	20	.03	60	57.75	78	76.75	20	.04	55	58.5	68	68
21	.75	54	54.75	73	73	21	.56	55	56.75	70	75.25	21	.04	55	58.25	65	65
22		53	53.25	69	71	22	.13	56	57	70	75.5	22	.06	53	57.25	65	65
23		55	53.5	69	72.5	23	.20	55	57.75	69	75.75	23	.66	56	56.5	75	75
24		52	54.25	74	72.5	24	1.40	53	57.25	65	75	24	.69	58	58.25	73	73
25		53	53.75	74	71.75	25	.09	54	57	68	73.75	25	.11	58	58.5	72	72
26		56	55.75	72	74.5	26	.22	56	58.25	71	73.75	26	.04	58	59.75	76	76
27		56	56.5	78	75.5	27	.58	56	57.5	71	74.5	27	.78	57	60.5	80	80
28	.43	54	55	73	73.5	28	.29	55	57.25	73	72.25	28	.57	59	60.75	79	79
29	.43	51	55.5	62	73.25	29	.01	55	57.75	77	77.25	29	1.02	56	60	73	73
30	.39	48	53.75	62	73	30						30	.06	55	58.75	76	76
31	.35	51	54.5	66	74.25	31	.27	58	58.5	78	76	31	.28	55	59	76	76

Tot.: 4.90in. Aver. 10yrs. 3.055in. 7.43in. Aver. 10yrs. 6.38in. 14.66in. Aver. 10yrs. 12

NO. XV.—CHRISTMAS, 1891.

(PART 3. OF VOL. IV.)

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THE  
ANTANANARIVO  
ANNUAL

AND  
MADAGASCAR MAGAZINE.

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THE  
ANTANANARIVO ANNUAL  
AND  
MADAGASCAR MAGAZINE.

*A RECORD OF INFORMATION ON THE TOPOGRAPHY AND NATURAL PRODUCTIONS  
OF MADAGASCAR, AND THE CUSTOMS, TRADITIONS, LANGUAGE,  
AND RELIGIOUS BELIEFS OF ITS PEOPLE.*

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The Editors are sorry to say that the two papers: "Twelve Hundred Miles in a Palanquin (to the south)," and "Twelve Hundred Miles in a Palanquin (to the north)," as announced in the Prospectus, were not ready for publication this year. It may confidently be promised, however, that these, as well as a paper by the Rev. E. O. MacMahon on his interesting journey to the west of the island, will appear in the next year's number.

——  
*No. XV.—CHRISTMAS, 1891.*

(PART III. OF VOL. IV.)

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THE  
ANTANANARIVO ANNUAL  
AND  
MADAGASCAR MAGAZINE.

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HAS THERE BEEN A RACE OF PYGMIES IN  
MADAGASCAR?

THE chief authority who has repeatedly been quoted as supporting the idea that a race of aborigines of dwarfish stature formerly occupied the interior highlands of Madagascar is the learned botanist M. Commerson, who accompanied M. de Bougainville in his celebrated voyage round the world. This savant, after acquiring a preliminary knowledge of the Mascarene flora in Mauritius (then known as the Isle of France) and Bourbon, proceeded, at the desire of M. Poivre, to visit the newly re-established French settlement in the south of Madagascar, in the year 1768. From the previous scientific labours of Commerson, who had a European reputation to maintain, it was natural that his correspondents and publishers should put the most implicit confidence in all his recorded personal observations, but on this occasion the botanical wonders of the Great African Island seem to have turned his head in some degree, and his active imagination and enthusiasm seem to have perverted his otherwise trustworthy comprehension and memory. Indeed it is almost possible to conceive that either he was suffering from a delusion brought about by malarial fever, or that his credulity was practised upon by some of the French settlers at Fort Dauphin.

Of his enthusiasm we may judge by what he said with regard to the botanical treasures of the forests and plains on the coast line only, for he never penetrated the interior of the island of Madagascar. He declared that Madagascar differed in toto from any other country in the world whatever. In 1771, writing to his intimate friend, the astronomer Lalande, he says: "Quel

admirable pays que Madagascar, c'est à Madagascar que je puis annoncer aux naturalistes qu'est la terre de promission pour eux. C'est là que la nature semble s'être retirée comme dans un sanctuaire particulier pour y travailler sur d'autres modèles que sur ceux où elle est asservie ailleurs ; les formes les plus insolites les plus merveilleuses s'y rencontrent à chaque pas."—"il faudroit en effet," he continues, "des Académies entières pour parvenir à connaître les productions de cette isle ; si la moisson serait trop abondante pour une seule Académie."\*

The Abbé Rochon regrets that the accounts of M. Commerson's important discoveries were lost or dispersed after the death of this indefatigable explorer, who was carried off just when he was on the verge of reaping the fruit of his explorations and investigations.† The Abbé was a personal friend of Commerson, and was an eye-witness of the wonderful activity of the botanist, who often, in the most trying climate, within the tropics, spent whole nights in preparing and describing the plants and other rare specimens of natural history which he had collected during the day under the scorching rays of a vertical sun ; for unless these specimens could be described while fresh, the opportunity was lost, perhaps for ever, of noting their special characteristics. No naturalist seems ever to have displayed more zeal and scientific knowledge in his ardent pursuit of science than this devoted man.‡

But it was not the flora alone of Madagascar and the Mascarene islands to which the attention of M. Commerson was confined. "Mes recherches," he says, "ne se sont pas bornées à la Botanique ; je n'ai pas observé avec une moindre attention les habitants de cette riche contrée," — and he proceeds to give M. Lalande a brief dissertation on certain tribes of Madagascar which has furnished the chief text on the vexed question of the existence of a race of dwarfs in the Great African Island, as follows :—

\* Letter from M. Commerson to M. Lalande, published in the supplement to the *Voyage of M. de Bougainville* par M. de Fréville (*Paris 1772, chez Saillant*).

† Many travellers had already seen the strange fauna and flora of the Malagasy region, but it required the eyes of the skilled botanist to detect the full value of this peculiar isolation of remarkable species, so near to and yet so far removed from those of the neighbouring continent of Africa. Unfortunately this able and enthusiastic disciple of Nature, worn out and suffering from ill health in this miasmatic district, was only able to continue his researches for three or four months. He never lived to see the whole of his vast collections properly determined by the European scientists. He was elected a member of the Academy of Sciences in 1776, but eight days previous to his election he died at Port Louis, Mauritius, at the early age of forty-six years.

‡ Rochon asks : "What remains at present (1792) of that immense collection of exotic rarities which he shewed to us at the Isle of France, and with all the more satisfaction that it cost him a deal of labour ? *Nothing*, or, at least, scarcely anything. I can call to witness M. de Jussieu, who was so kind as to transmit to me such fragments of his valuable researches as he was able to procure. These melancholy remains of the unwearied labours of a distinguished philosopher contain nothing but remarks of little importance upon some plants described by M. de Flacourt in his *Histoire de Madagascar*" (published in 1662).

It may here be added that many of the plants collected by M. Commerson have been named and described within the last few years.

“I will now proceed to give the description of a really extraordinary people who inhabit the highest mountains of Madagascar. This relation will no doubt be acceptable to those amateurs of the marvellous, all the more that they must have been indignant at my having, when speaking of the Patagonians, reduced to six feet only the height of those pretended giants, those prodigious Titans of Magellan's Straits, which have only existed in the heated imagination of poets and sailors.\*....

“These dwarfs (*demi-hommes*) inhabit the high mountains of the interior of the great island of Madagascar, and form the bulk of a considerable nation called *Quimosse* or *Kimosse* in the Madecasse tongue.”

M. Le Gentil, the astronomer who visited the Indian Ocean for the purpose of observing the two transits of Venus (in 1761 and 1769), remarks on this statement of Commerson: “I know not if the *Esquimaux* of the arctic regions have furnished M. Commerson, by some distant resemblance, with the word *Quimoss* or *Quimos*, by which he denominates the pretended Pygmies of Madagascar. But what is certain is, that the word *Quimosse* is not a Madecasse word, as he pretends; it is not to be found in the language of the country, which is allied closely to the Arab tongue. Especially at Fort Dauphin there is no term which approaches that of *Quimosse*; this word, on the contrary, has far more resemblance to Portuguese than to Madecasse. *Quiros*, *Quevedo* are Portuguese or Spanish names, and *mosse* is a term which the Portuguese have brought into India, which signifies servant or chamber-maid, and which comes from *Moça* (*mozo*=a groom).”

Nevertheless in justice to M. Commerson it must be admitted that Le Gentil's criticism was too severe, for within late years both Mr. Cousins and Mr. Pickersgill have received from Malagasy accounts of a tribe called the *Kalio* or *Behósy*,† which last name could easily be corrupted into *Quimosse*. These wild, harmless, little folk, few in number and little known, even in Imèrina, except by name, are said to inhabit the cliffs and rocks on the border-land between the western Sàkalàva and the Hòva, in a wooded country extending from Mojangà to Mahàbo. Their food is reported, by hearsay, to be wild honey, eels,

\* Le Gentil was altogether sceptical and indignant at Commerson's letter to Lalande. He says: “Je veux bien croire que cet infatigable Botaniste a pu ramasser dans son voyage, quoique rapide, autour du Monde, Vingt-cinq mille plantes; je ne lui contesterai pas que la taille ordinaire des Patagons, avec lesquels il a passé deux heures entières et que je n'ai pas vus, n'est que de cinq pieds six à huit pouces, et qu'aucun n'excède six pieds quatre pouces; je lui passe que les Patagons de l'intérieur, des terres qu'il n'a pas vus, soient aussi renfermés dans les bornes de six pieds quatre pouces, qui passe, cependant, ici pour être celle d'un Géant, ou d'une taille extraordinaire, est commune en Franche-comté, et en Suisse et en Allemagne; mais je contesterai à M. Commerson, c'est qu'il y ait des Pygmées à Madagascar” (*Voyage dans les Mers de l'Inde*, Tome II. p. 504).

† See ANTANANARIVO ANNUAL, 1875—1878 (Vol. I. pp. 78, 124); also the following paper by Rev. E. O. McMahon.

and lemurs. These last animals are said to be caught by them in traps, and kept and fattened. These wild people are black, and in appearance much like the Sakalava. They make network of cords (*hòsy*), hence their name of *Behosy*. They jump from tree to tree like the lemurs, and cannot easily be followed, as the country is very rocky. They are extremely shy and timid, so much so that whenever one is captured he dies of fright. To proceed with M. Commerson's account, however:—

"The natural and distinguishing characteristics of these little people are that they are fair, or at least paler in colour than all the known black tribes around them, that their arms are very long, so that their hands can reach below their knees without bending their body; and as to their women, they are scarcely distinguished by their breasts, except when they are nursing their young; and even then, we are assured that the greater part of them are obliged to make use of cows' milk in order to nourish their new-born infants. With regard to their intellectual faculties these *Quimos* can vie with the other Madecasses, who are acknowledged to be sharp-witted and ingeniously clever, although giving themselves up to idleness; but we are assured that the *Quimos*, far more active, are also more warlike, so that their courage, being, if I may thus express myself, in proportion double of their stature, they have never been overcome by their neighbours, who have often come into conflict with them. Although attacked by superior forces and weapons (for they have not got powder and muskets like their enemies), they have always fought courageously and maintained their freedom amidst their rocky homes, the difficult access to which contributing no doubt towards their preservation.

"They live there upon rice, various kinds of fruits, roots, and vegetables, and rear a great number of oxen and sheep with large tails, which form also a portion of their subsistence. They do not communicate with the different Madecasse castes by whom they are surrounded, either for the sake of commerce or for any other matter whatever, procuring all they need from the soil which they possess. As the object of all the petty wars between them and the other inhabitants of the island is to carry away on either side a few cattle or slaves, the diminutive size of our *Quimos* saves them from this last injury; they are so fond of peace that, with regard to the first injury (the carrying off of their cattle), they resolve to endure it up to a certain point, that is to say, when they see from the heights of their mountains some formidable expedition of war which advances into their plains, they take, of themselves, the precaution to carry some of their surplus flocks to the entrance of the defiles, where they leave them, and (as they say) make a voluntary sacrifice for the poverty of their elder brethren; but with protest-

ation, at the same time, that they will fight *à outrance* if any of them pass with arms in their hands a step further within their territory; a proof that it is neither from weakness or cowardice that they purchase tranquillity by presents. Their weapons are the *sagaye* (a species of lance equivalent to the *assagye* of the African tribes) and the *dart* (*trait*), which they hurl with the greatest possible precision. They boast that if they could only obtain, as they greatly desire to do, communication with the Europeans, and possess themselves with guns and munition of war, they would willingly exchange their defensive attitude for an offensive part against their neighbours, who would then, perhaps, be only too happy to preserve the peace.

"At three or four days' journey from Fort Dauphin, the inhabitants of that part of the country show a number of small tumuli, or earthen mounds, in the form of tombs, which, they assure us, owe their origin to a great massacre of *Quimos*, defeated in the open field by their ancestors."\*

On this statement M. Le Gentil comments as follows (Vol. II. p. 508): "I do not know if M. Commerson has seen this fabulous monument of which he speaks, but without going to thirty or forty leagues from Fort Dauphin, he could have seen the same thing close to Itapère, which is not more than two or three leagues from Fort Dauphin. He then proceeds to quote by way of refutation of the fable (as he calls it) what M. Flacourt wrote more than a hundred years previously (1686) of this mythical race of dwarfs at the end of his preface:—

"Quelques-uns ont voulu faire accroire qu'il y avoit des Géants et des Pygmées; je m'en suis informé exprès, ce sont des fables que racontent les joueurs *l'Herravou*" (native bard who travels the country playing on the *valiha* or *lokanga*, the rude musical instrument of the Malagasy). "J'ai vu un endroit proche d'Itapère, où il y a une grande quantité de pierres plantées debout, où l'on m'a dit que c'étoit des Pygmées qui y étoient enterrés; ces Pygmées étoient venus en grand nombre faire une course dans le pays d'Anossi, dont ils furent repoussés jusqu'à la rivière d'Itapère, laquelle n'ayant pu passer faute de bateaux, ils furent tous mis à mort, et pour marque de victoire, les victorieux les enterrèrent tous et dressèrent ces pierres."

To continue, however, M. Commerson's dissertation:—

"However this may be a tradition generally believed in these

\* The Abbé Alexis Rochon, when quoting this passage (*Voyage aux Indes Orientales*, Tome I. p. 131.), expresses his surprise that M. Commerson does not seem to have verified this statement by making excavations of some depth in these mounds; but there is no doubt that the superstitious Anossi tribes would never have permitted any one of themselves, much less any foreigner, to open one of these graves of the *Vazimba*, as they are called. To this day we do not know of any European having ventured to dig into any of these mounds, nor could they obtain native labour or assistance for such a purpose.

districts (*cantons*), as well as a general notion existing throughout the whole island of Madagascar, do not permit us to doubt that at least a portion of what they relate may be true. It is surprising that all that is known of this nation should have been gathered from their neighbours; that no one has as yet made any observations of fact on the spot where they live, and that neither the Governor of the islands of France and of Bourbon, or the several Commandants of the different posts which we have held on the coasts of Madagascar, have ever attempted to gain access to the interior of these countries, with the view of adding this discovery to so many others which could be made at the same time. This attempt has indeed lately been made, but without success.

"To return to our *Quimos*, I can attest as an eye-witness that, during the journey which I made to Fort Dauphin (about the end of the year 1770), M. Le Comte de Modave, the last Governor, who had already communicated to me a part of his observations, at length afforded me the satisfaction of seeing among his slaves a *Quimose* woman, aged about thirty years, three feet seven inches in height, whose colour was indeed of the palest shade (*de la nuance la plus éclaircie*) which I had seen among the inhabitants of that island. I remarked that she was well shaped, though of such small stature, not at all resembling small shrivelled up people (*fluettes*), but rather a woman of ordinary proportions in detail, but only curtailed (*racourcie*) in her height; that the arms were certainly very long and reaching, without her bending, to the knee-cap (*rotule du genou*); that her hair was short and woolly; in physiognomy fairly good-looking, approaching more nearly the European than the Madecasse; that she had an habitually smiling look, of good humour, obliging, and of good sense, to judge from her conduct. With regard to the breasts, we could only perceive the nipples; but this solitary observation is far from sufficient to establish an exception to the common law of nature. Finally, a short time before our departure from Madagascar, the desire of recovering her liberty, as well as the fear of approaching embarkation, induced the little slave to flee away into the woods. All considered, I conclude by firmly believing in this novel degradation of the human species, which has its characteristic description, as also its peculiar habits.

"The diminution of stature, in respect to that of the Lapps, is graduated by degrees from the Lapp to the *Quimos*; the one and the other inhabit the coldest zones and the mountains of the greatest elevation in the land. Those of Madagascar, where the *Quimos* live, are sixteen to eighteen hundred fathoms in height above the level of the sea" (11,400 feet elevation! In reality



the highest mountains in Madagascar do not exceed 9,000 feet ; the highlands of Imerina, Bètsilèo, etc., average some 4000 feet). "The vegetation, which naturally grows on these great heights, only appears to consist of abortive plants, like the pine and birch, and such others as pass from the class of trees to that of low shrubs, for the sole reason that they have become Alpine plants (*alpicoles*), that is to say, denizens of the highest mountains."

Such is M. Commerson's account of the dwarfish race supposed by him to inhabit the interior highlands of Madagascar, and it may be as well to subjoin the further remarks of M. Le Gentil on the last paragraphs. He proceeds to contest M. Commerson's foregoing observations and conclusions altogether:—

"It is," he writes, "false that there is at Fort Dauphin any tradition of Pygmies actually existing in Madagascar; it is equally false that there is a general consensus of opinion throughout Madagascar as to the present existence of these imaginary *Quimos*. I have been, like M. Commerson, to Fort Dauphin, and I have never heard any one speak of these Pygmies either there or in any other part of Madagascar that I have visited with care and without any preconceived ideas. May more, I have lived for nearly six years both in the Isle of France and in Madagascar, among sailors, supercargos, who knew Madagascar perfectly, and amongst interpreters who knew the language, and who had penetrated far into the interior. I have asked them thousands and thousands of questions about the species of men whom they had seen, and never heard them speak of this race of Pygmies. If the tradition of them was so persistent at Fort Dauphin, and the report so generally existent throughout all Madagascar, as M. Commerson asserts, I should have heard speak of them; and had I heard anything of them, it would have stimulated my curiosity to make the necessary researches to well establish the fact.

"M. Commerson says, in support of his opinion, that the Count de Modave, late Governor at Fort Dauphin, showed him among his slaves a *Quimosse* woman, about thirty years of age and three feet eight inches in height; but it is to be remarked, in the description which the author makes of this individual, that it was a being of the ordinary species, and only a deformity produced by some cause different to that which produces at Fort Dauphin such a fine race of men, a phenomenon rare in Madagascar, but very common in France.

"I would remark again here that the letter of M. Commerson is dated 18th April, 1771. I left the Isle de France on the 1st April of the same year, and previous to that date I had seen

very frequently, at the Isle of France, M. Commerson, who never told me anything about this rare species of men. I know that this silence on his part does not constitute a disproof of the existence of the *Quimos*, but it at least shows that the fact was kept a great secret, since I never heard any talk of it in the Isle of France, during more than three months that I remained there, subsequent to the last voyage of M. Commerson to Fort Dauphin (*Voyage dans les Mers de l'Inde*, Tome II. p. 508)."

Now let us hear what Count de Modave, the Governor of Fort Dauphin, has to say himself on the subject. The Abbé Rochon, who is a deservedly trusted chronicler, gives a brief notice of this French official in the final volume of his *Voyage aux Indes Orientales* (p. 134).

"When I arrived," writes M. de Modave, "at Fort Dauphin in September, 1768, a rather unsatisfactory memoir was handed to me, which contained some particulars of a singular people, named, in the Madecasse language, *Quimos*, who inhabit the centre of the island of Madagascar, in latitude twenty-two degrees south. I had previously heard speak of them many times, but with so much uncertainty that I had not hitherto given any attention to a fact which deserves to be elucidated. It dealt with a people of dwarfs, living in society, governed by a chief, and protected by civil laws. I had, naturally, read in Flacourt's narrative the passage (above quoted) which relates to this nation, but this passage had made no impression on me, because Flacourt rejects the history of this dwarfish race as a fable invented by the players of the *Herravou*. These *Herravou*-players are stage actors, buffoons, and regular charlatans, who pass their time in singing absurd ballads and inventing ridiculous stories. Flacourt names these little folk *Pygmées*, and mixes up their history with that of a pretended race of giants, who, as we are assured by the ancient traditions of Madagascar, formerly committed great ravages in the island. Flacourt reports, after these *Herravou* performers, that the Pygmies formerly made an invasion in the country of Anossi, from whence they were repulsed by the Atanossi, who are the indigenous people. The Atanossi surrounded the Pygmies on the banks of the river Itapère, and massacred them all; they subsequently erected in this locality a number of stones to mark the burying-places of their enemies, and as monuments of the victory which they had gained over them. After having obtained at Fort Dauphin and in the neighbourhood all the information possible, I resolved, two months ago, to send a party to discover the country of the Pygmies. The detail of this enterprise is recorded in my journal; it met with no success, through the treachery and cowardice of the guides.

But none the less I gained enough information to assure myself that there is really a nation of dwarfs which inhabits a country of this island. The people call themselves *Quimos* or *Kimos*; the average height of the man is three feet five inches; they wear beards long and rounded; the height of the women is some inches shorter than that of the men. The *Quimos* are thick and squat (*gros et trapus*), the colour of their skin is less swarthy (*bazanée*) than that of the other islanders, and their hair is short and woolly. They forge iron and steel, of which they make lances and *sagayes*; these are the only arms which they use to defend themselves against their enemies, who try sometimes to carry off their cattle. When they perceive parties of travellers who prepare to enter their country, they fasten oxen to the trees, and put these as well as other provisions, in order that these strangers may find on their frontiers the means of subsistence. But when these strangers are so imprudent as to invade them, and are not content with the present usual under such circumstances, the small *Quimos* know how to defend themselves vigorously, and to repulse by force those who have the temerity to attempt, in spite of them, to penetrate into the valley which they inhabit, and to which access is difficult. Ramonja (*Remouzay*), who had followed in the rank of captain, the father of the chief Maimbo, in the two unfortunate expeditions which he undertook against these people, in order to carry off part of their cattle, and to sell them afterwards at Fort Dauphin, has told me that he only owed his safety to the intimate knowledge which he possessed of the elevated and precipitous mountains which enclose their valley. Ramonja had been several times among the *Quimos*; the father of Maimbo had taken him as guide when he ventured to attack them. The first incursion had no success, but the second was more disastrous. The brother of Maimbo was killed, his small army was put to route, and the number of those who escaped pursuit by these Pygmies was inconsiderable. Notwithstanding all the researches I was able to make, I have only known Ramonja who could give me precise details about these two incursions."

From the above it is evident that M. Commerson drew his information from M. de Modave, or from the same source, viz. the chief Ramonja; and the account, apart from the exaggerated report of the diminutive size of these people, corresponds, as will afterwards be shown, with the Hova tribe of the highlands, now known as Imerina, where the people are slightly below the average standard of the other Malagasy tribes.

"Maimbo," he continues, "with whom I have had a good deal of intercourse with regard to the provisioning of Fort Dauphin,

was not of an age to accompany his father on this expedition, but he had preserved such an aversion against the *Quimos* that he became furious whenever I spoke to him about them. He tried to induce me to exterminate this race of monkies (for he would only call them by this insulting denomination). A chief of the Mahafaly, whose country borders on St. Augustine's Bay, who came to a chief's house near the fort to exchange oxen for silk and other merchandise, said, in the hearing of one of my officers, that he had been several times in the country of the *Quimos*, and that he had even fought with them. This chief added that, some years ago, this nation had been much harassed by this neighbouring tribe, and that several of their villages had been burnt. This chief boasted of having at his home a *Quimos* and a *Quimose*, almost of the same age; he judged them to be from 20 to 25 years, and I had reason to hope that he would keep to the promise he made to my officers that he would send them to me.

"From the accounts of this chief and that of Ramonja, I have reason to believe that the valley of the *Quimos* is very rich in cattle and in all sorts of supplies. These little people are laborious and good cultivators. The chief of the *Quimos* is endowed with the most absolute authority, which is more respected than that of the other chiefs of different countries of Madagascar. I have not been able to learn the extent of the valley which they inhabit; I know only that it is surrounded by very high mountains, and that its situation, in respect to Fort Dauphin, is to the north-west, at sixty leagues' distance. The country of the Matatanes borders it, in the part of the west. Their villages are perched on the summits of small hills, of which the slope is so much the less easy to ascend, because they have multiplied the obstacles which defend the approaches to them. The chief of the Mahafaly and Ramonja are not altogether agreed on two points which particularly deserve elucidation. The opinion general of the Medecasse is that the *Quimose* women have no breasts, and that they nourish their children with the milk of their cows. They add that they are not subject to certain periodical ailments, but that at certain times their skin becomes ruddy. Ramonja has certified to me that this opinion is well founded, but the chief of the Mahafaly contradicts it; thus we should suspend our judgment, and be circumspect in giving credence to phenomena which appear to deviate so much from general rules, when they extend to only a certain number of individuals. I procured a *Quimose* woman, who was taken in war some years since by a chief of the province of Mandrere; this woman is of a high stature, in comparison to that which is attributed to the other women of her nation; nevertheless she is only three feet seven inches in height; her

age is from 30 to 32 years; her arms are very long, and her hands resemble somewhat the paw of an ape; the breasts of her bosom are as flat to the chest as those of the thinnest men, without vestige of teats. My little *Quimose* was terribly thin on her arrival at Fort Dauphin; but since she has been able to satisfy her voracious appetite, she has become quite fat, and I believe that when she has recovered her natural state, the features of her face will deserve careful attention. The chief who has sold me this *Quimose* has told me that one of his friends has with him a *Quimos* (man), and that he will do his best to get him for me.

"Had the enterprise which I made two months ago succeeded better, I should certainly not have let slip this occasion to send to France two of these Pygmies, of both sexes; but I shall, perhaps, be more fortunate by the following occasion. It is doubtless not a great wonder to meet with dwarfs in a country of so vast and wide an extent as the great island of Madagascar, whose surface embraces many climates and productions extremely varied; but a true race of Pygmies, living in society, is a phenomenon which it is not permissible to pass over in silence."

To this relation of MM. Modave and Commerson the Abbé, who firmly believed in their credibility, states that he could add the testimony of an officer who had procured a *Quimos* man, and who had wished to send him to France by ship, "but M. de Surville, who commanded the ship on which he embarked, refused (with unusual humanity as it appears to us) to grant permission. After these authentic testimonies," continues M. Rochon, "we cannot help feeling surprised that Flacourt has treated as fabulous the stories concerning these people. We should therefore cease to produce the authority of this man (Flacourt) in opposition to the above facts, a man in every way to be suspected on account of his implacable hate towards the Madecasses."

Turning again to M. Le Gentil's narrative, let us hear what he has to say about the Count de Modave, whose statement agrees so completely with that of M. Commerson. He writes:—

"I have seen M. le Comte de Modave, with whom I was very intimate; he rendered me, indeed, most essential service, and which I shall never forget. M. de Modave had then just returned from Fort Dauphin; I very often discussed with him the affairs of that colony, but I do not recollect that in any fashion he ever alluded either to the *Quimos* or to his negress, the pretended *Quimose*."

M. Le Gentil himself describes in his nineteenth article (at the end of which occurs his diatribe on MM. Commerson and de Modave) a people whom M. de Flacourt had never met with, and who, as we presume to show, bore many of the characteris-

tics attributed, with pardonable exaggeration, to the so-called *Quimos*. M. le Gentil says : "There are, it appears to me, properly speaking, only two species of men in Madagascar, both of them black, which differ solely one from the other, in that one, like the tribe of Africa or Mozambique, is very black, has wool on his head, so to speak, that is to say, hair short and very crisp; this species is in general strong and vigorous. . . . The other human species inhabits the centre or the middle of the island; it is not so dark as the first; its colour is more bronzed, but it is above all remarkable by quantities of hair long and straight, which appear incapable of receiving the least curl; they arrange them in long tresses, which they let fall below their shoulders; the species has not the flattened nose, but a face and features like the European often surmounts a body well proportioned. The women are good-looking; but this species is slight in form without stoutness, and consequently without much strength. These people have a very delicate temperament, on which account they are not much valued at the Isle of France as slaves, not being capable of doing hard manual labour like the other blacks or the Caffres; nevertheless they are very spirited and far more clever than the Caffres. These people from the middle of the island of Madagascar call themselves *Oves* in this country. What is remarkable about them is that these *Oves* have some resemblance with the Egyptians and Chinese in their cast of countenance and features."

These people, whose country was not known in the days of Le Gentil, are those known better in our own times as the Hova of Imerina. These Hova are, according to the best authorities, comparatively recent (from an ethnological point of view) arrivals in Madagascar, and of Malayan origin; but in the days of Le Gentil, Rochon, Modave and Commerson, and even in the former times of Flacourt, they had long been established in the island. Their stature is decidedly of a standard inferior in height to the coast tribes, and their habits of tending large herds of cattle, forging iron and their skill in metal work, their bravery and tenacity of resistance and their patriotism, all agree with the accounts attributed to the *Quimos* by the Count de Modave. These Hova and their allied race the Betsileo, however, seem to have displaced an aboriginal people, the *Vazimba*, possibly autochthones, whose cairns are yet to be found scattered over the bare downs throughout the highlands of Imerina and Betsileo at the base of and on the outskirts of the mountainous crests of the Ankàratra volcanic peaks, which attain a height of some 8000 feet, exaggerated by the enthusiastic Commerson, as before mentioned, to 11,000 ft. Considering the height of the Piton des Neiges in the small island of Bourbon (11,000 ft.), the eminent botanist had every reason to

suppose that the lofty mountains of Madagascar, which he had viewed from the sea, probably attained at least an equal altitude.

\* The *Vazimba*, whose graves are yet regarded with superstitious reverence, by traditions extant among the present inhabitants, seem to have been a people of low stature, with heads somewhat narrow and elongated, were ignorant of the use of iron, and from their inferiority to the incursive Hova, in this respect, were obliged to flee before their superior weapons. A remnant of this tribe, according to M. Guillaïn, still existed, in 1843, between the rivers *Mànambôlo* and *Tsribihina*, and even the names of six of the last *Vazimba* sovereigns are preserved. The last of these is said to have been driven westward by *Andriamanêho*; and the tradition goes that Lake *Itasy* was formed by a former *Vazimba* hero, named *Rapêto*, damming up the river in the vicinity in order to inundate a rival potentate. There seems to be little doubt that the so-called *Quimose* woman, who fell into the hands of, and escaped from, the Count de Modave, was a Hova, and doubtless a small-sized example. She was, confessedly, half-starved when brought to Fort Dauphin, and, from long exposure in the woods, had doubtless acquired a wild demeanour, but she seems to have been regaining her good looks before she escaped.

Now there is, and has always been, much intercommunication for slaving and trade purposes between Zanzibar and Madagascar, and both at Zanzibar and at Brava, according to Dr. Schweinfurth, stories of the dwarfs from the interior of Africa are in everyone's mouth, and they are termed the *Berikeemo*,\* i.e. people two feet high. Here we easily see the origin of the name *Quimos* or *Kimos*, which, as Le Gentil rightly said, is not a Malagasy word, but which could easily have been adopted by the Arab traders on the coast as expressive of a dwarfish race. Indeed the term *Vazimba*, used by the Malagasy at the present day for the aborigines, is derived probably from the African Swahili dialect *wazimu*, an ogre, a mad person; *kuzimu*, 'in the grave.' Dr. Schweinfurth gives a summary of the dwarfish races of Africa, and concludes that the evidence is established that a series of imperfectly developed nations extends across equatorial Africa from the *Matimbas* or *Dongo* of Battel† to the *Bakka-Bakka* of Dapper and Ogilby, whose

\* Lieut. Boteler, R.N. speaks of these *Mberikimo* as being heard of at Mombasa. See his *Narrative of a Voyage of Discovery to Africa and Arabia*. London, 1835; Vol. II. p. 212.

† Andrew Battel, of Leigh in Essex, who was sent by the Portuguese as prisoner to Angola, where he resided eighteen years (1589 to 1607), describes these *Matimbas* as a kind of little people, no bigger than boys of twelve, but very thick, who kill the *Ponjos* with poisoned arrows. Professor Flower has lately drawn attention to this old relation, and adds that there is the skeleton of an *Akka* in the Osteological Gallery of the South Kensington Natural History Museum, sent there by Dr. Emin Pasha.

description tallies closely with that of the *Akka* found by Schweinfurth, and lately encountered by Stanley's expedition in numbers. It is remarkable that these *Bakka-Bakka*, who attended as dwarfs at the court of the King of Loango in the seventeenth century, were sometimes called *Mimos*; so here again we meet with an analogy to the *Quimos* of Modave and Commerson.

Among the Betsimisarakas people of the east coast we get endless stories of the *Kalandro*, a sort of wild-men-of-the-woods, who are represented as very short of stature, covered with hair, with flowing beard in the case of the male, and with an amiable weakness for the warmth of a fire. An eye-witness relates that once, when spending a night in the heart of the forest, he lay awake watching the fire, which had died down to red embers, when suddenly he became aware of the presence of one of these wild men, without the least clothing, warming himself at the fire, and apparently enjoying it immensely. According to his story, the Betsimisaraka grasped his stick and sent the hot ashes flying over his mysterious visitor, who fled with an unearthly shriek. Another native has told how, on a similar occasion, the male appeared first, who, after inspecting critically the bivouac, and finding some rice left in the pot, went away and returned with a female. This pair of nude human beings then proceeded to feed one another with curious grimaces, until, on being disturbed, they timidly fled into the adjoining thicket. Every now and then some of the natives who wander through the forests in search of india-rubber and copal gum relate incoherent stories of adventures with these so-called wild men; and, indeed, captures of them have been reported, but they ever manage to escape from civilized ken.\*

M. Leguével de Lacombe, who accompanied the army of Radama I. in 1824 to the north, heard of these wild folk when traversing the forests on the banks of the Mānahāra, near Antongil Bay. He states: "Ces lieux retirés sont habités par des hommes qui préfèrent la liberté aux douceurs de la vie sociale; ils ont perdu la tradition de leur origine. Les Malgache les appellent *Oul'-hala*,† ce qui veut dire hommes des forêts; ce sont des familles nomades, qui sont toutes indépendantes entre elles et qui ne reconnaissent pas même l'autorité patriarcale des vieillards, car il arrive souvent qu'elles se séparent. Ces hommes n'ont aucune idée de l'industrie la moins avancée; l'écorce des arbres est le seul vêtement qu'ils possèdent et ils n'en désirent pas d'autres. S'ils ne trouvent pas de cavernes pour se mettre à l'abri, ils construisent en un

\* G. Herbert Smith, on Betsimisarakas Superstitions in *ANTANANARIVO ANNUAL*, Vol. III. p. 242.

† *Olo*, for *Olona*, a person, and *Ala*, a forest.



instant des barraques en feuillage, où ils s'établissent pour quelques jours. La culture donne trop de peine, disent-ils, et les troupeaux suscitent des ennemis qu'il faut combattre; les forêts contiennent assez de gibier, les arbres et la terre plus de fruits et de racines qu'il ne nous en faut pour vivre" (*Voyage à Madagascar*, Tome II. p. 53).

M. Ternaux Compans unearthed a curious manuscript letter from the Abbé de Choisy to M. l'Abbé de Marins, in the Bibliothèque Nationale at Paris, which was published in his *Recueil historique*, t. xv., evidently a *jeu d'esprit*. It purports to be written from the town of San Jacob in the Isle of Madagascar, and describes some fabulous dwarfs known as the Tarisbos. He says:—

"Les Tarisbos sont des petits hommes sauvages habitant les sapinières. Le plus grand de ces petits nains n'a pas dix-huit pouces, ils vivent en société comme les autres hommes. Leur plus ordinaire occupation est la chasse dont ils se nourrissent. La graine de pomme de pin leur sert de pain; leur breuvage est de l'eau dans laquelle ils écrasent des fraises et de grosseilles rouges qu'ils ont abondamment dans les bois et les montagnes. Ils ont guerre continuelle avec les grands magots à cul-bleu. Les Européens qui trafiquent en cette coste là, leur apportent des pistolets de poche avec lesquels ils épouvantent ces magots et en tuent même quelquefois. Ces petits drôles sont aussi fiers que les lions\* qui habitent auprès d'eux dans les montagnes. Ils nourrissent de petits animaux semblables à nos renards et de la même taille qui leur servent de monture pour courir à la chasse de long des rochers les plus escarpés. Ces nains parlent et conversent ensemble comme les autres hommes. Il y en a dans cette ville plus de trente, tant mâles que femelles, que les marchands nourrissent pour leur plaisir, et comme ils ont appris à parler bon Portugais, on a jugé de là qu'ils sont créatures raisonnables. . . . Ils se marient comme les sauvages et vivent beaucoup moins brutalement. Ils sont gaillards et ont de l'esprit comme des singes."

This letter is supposed to have been written in 1635, but its authenticity is doubtful. Whenever written, it was evidently in ridicule of the idea of the dwarfs reported as existing in Madagascar.

In connection with this subject it may be mentioned that, throughout the island, there are to be found certain sacred spots, for instance, where the grass, probably being disliked by the cattle, has grown long in a circular patch, which the people call

\* It is needless to say there are no lions in Madagascar. M. l'Abbé de Marins styled himself M. l'Abbé de St. Martin, Escuyer, Seigneur de la Mare du désert, Premier Docteur en Théologie de l'Université de Rome et Protonotaire du Saint-Siège, etc. He was an ignorant, vain, half mad fanatic of the end of the 17th century.

*fàsam-bazimba*, i.e., the graves of the Vazimba, whom they regard much in the same light as the fairy folk are regarded by the people in Europe and our own islands, for instance, the name of fairy-rings given to the circles caused by the growth of certain fungi, which are even now supposed in remote localities to indicate the track of the dancing elves. In Madagascar these patches are resorted to in illness with the promise of a *sòrona*, or supplicatory offering, in the shape of a fowl or even an ox, if the sickness can thus be removed. It is also supposed that when one falls ill without any assigned cause, the sickness may have been caused by treading unawares on one of these *fàsam-bazimba*, when it becomes necessary to trace the particular grave which has thus been desecrated and to make a votive offering at the spot trodden on. It is considered, however, lucky when such grave of the invisible Vazimba is found to occur near to a man's *vàla* (garden or plantation), as the fortunate owner of the ground can obtain what he wishes by asking properly, i.e. not empty handed. But he must beware lest his children or friends cross it unawares.

To conclude, the reply to the question asked at the beginning of this notice may be considered to be a decided negative. For although there is no actual disproof, the evidence in favour which has been adduced by some writers is far from convincing, and constant inquiry has failed to elicit any tangible proof of the existence of abnormally sized people in the island. Nevertheless it must be confessed that such wide areas of the Great African Island yet remain to be explored, that it is possible that remnants of some undersized race like the Bushmen of South Africa may be met with in the near future. It is, however, certain that no widely known race of pygmies, like the *Akka* of Schweinfurth and the fierce little *Batwa* and *Wambulli* recently described by Stanley, can exist in numbers sufficient to form a tribe occupying a district like those spoken of by Commerson and M. de Modave.

S. PASFIELD OLIVER,  
*late Royal Artillery.*



FIRST VISIT OF A EUROPEAN TO  
THE BETSIRIRY TRIBE.

A GLANCE at the latest maps of Madagascar will show how little is known of the island west of Imerina. There is a tract of country about one hundred and fifty miles broad, and reaching north and south for several hundred miles, which is as yet unexplored, except so far as M. Grandidier and a few other Europeans have made journeys on the coast and along the routes to the different Hova garrison towns. To the natives this stretch of country is known as the *ôfitra* (wilderness, or more literally, uninhabited region dividing different tribes), and is looked on with great dread, owing to the ravages of the Sakalava bands of marauders who, during the dry season, cross over to the border-land of the interior provinces, and carry off great numbers of cattle and not a few captives, mostly women and children, as slaves.

From the highlands of Vakinankaratra one can look across some fifty miles of this wilderness, stretching away to the first range of mountains, and even catch glimpses of higher peaks further west. Many times have I looked over this expanse of waste and wondered if it would be possible to get across it and make friends with the Sakalava on the other side.

I gathered a little information from some native hunters, bands of whom set out during the winter from the border-land to catch the calves of the wild oxen, which abound in the wilderness, but the information was not assuring, neither as to the trackless waste, nor as to the kind of reception I should probably receive from the Sakalava, who were reported as very fierce; and I found that this information was pretty correct. There is a road to Manandaza and another to Mahabo, which are both on the borders of the Betsiriry tribe which I desired to reach, but I did not wish to approach the Sakalava through the Hova garrison towns, so that when I set out in May, 1888, I decided to cross the wilderness, keeping near the left bank of the Mahajilo till we came to the junction of that river with the Mania, which we hoped to reach in six days after leaving the western borders of Imerina. Our difficulties soon began, for the porters, which, after much difficulty, I had engaged to accompany us, got disheartened as soon as we had passed all signs of human life, and we soon found our numbers reduced to thirteen, including myself and two Hova teachers. With only ten porters we had to discard all such luxuries as tent, beds, stores, etc., and could only take what was absolutely necessary, as rice for the road could not be left behind. Six of the ten men took a palanquin lest anyone should fall ill, the other four taking rice, beads, etc., for barter, a few medicines, and a few things for me. We found some strips of dried beef and a bag of tiny fresh-water shrimps with rice excellent as long as they lasted. When after much discussion as to what we could take and what must be left behind, and each man had as much to carry as it was safe to give him, we found we had not included cooking-pots. Those we had intended to take were of iron, and were out of the question, as taking one meant leaving so much rice behind; so we sent back for two native earthenware pots and made a rule that anyone who broke one should be beaten, to which the men

agreed, according to their own proverb: "Better a foolish person should die than (the party should) be with a broken cooking-pot in the wilderness." To be without a cooking-pot I thought would be a serious contingency, but the men said it would be possible to use a thick bamboo to cook rice in, if by chance we should be without pots.

Our first night was spent in a valley where we found some brushwood and a stream; we made a large fire to keep off the dew and mosquitoes; I tied my string hammock to a tree, but was soon driven out of it by the mosquitoes, which swarmed round us as soon as the sun went down, and I found a grass bed near the fire the best sleeping-place, which I used for the rest of the journey.

The next day we passed between Ihàsy and Vòhibè, both very fine hills. Upon their sides wild goats are said to be found. We missed one of our porters this day and, fearing that he was ill, I sent two men back to look for him, but they could not find him; at last, by the side of a small stream, they saw his load and one of the cooking-pots broken! Poor fellow, he had put down his load to drink, and in doing so no doubt broke one of our two cooking-pots, and then started off home fearing the beating in store for him. This further hampered us, as we could not afford to leave any rice behind; but as it got visibly less each day, we managed to take on his things. We crossed two streams, the Takòà and Bèràvina, and made grass huts for the night, as the dew was very heavy.

On the third day we crossed the first range of hills, running north and south, and as we ascended the eastern slope of a hill called Sòamòdy, we found some caves, and in one a quantity of human bones, some of them lying just as the persons had died. There is a report, which is probably true, that, on the return of Radàma I. from his expedition against the Sakalava, many of his men perished from exhaustion, and a number of the poor fellows had crept into this cave and perished. We found it easy of access, but difficult to get out of, owing to a leaning rock. We saw several traces of this unhappy expedition on our way, and in the Sakalava country I was shown Radama's camp and residence. A platform of stone and earth, no doubt the centre of his camp, and a wood, were pointed out by an old warrior as the scene of a battle, which he well remembered, and in which the Hova seem to have suffered severely. Radama retreated southwards and afterwards asked for the hand of Rasalíma, a Sakalava princess, as one of his wives. This ended the quarrel, and the agreement that the Sakalava king should govern the west country and Radama be king of the highlands, which is supposed to have been then made, was referred to by all the Sakalava chiefs that I met.

We crossed three good-sized streams running from these hills northwards, no doubt tributaries of the Kitsàmby. We did not get to the second range of mountains, which are much higher than the first, till the fifth day, having found travelling extremely difficult in the valleys, the grass being often from twelve to fifteen feet or more in height, and through which we had great difficulty in making our way; while on the more open ground the grass called "wild hog spears" (*Heteropogon contortus*, R. and S.) was worse, as the barbed heads, with a sticky substance round the shaft, found their way through our clothes and well into the skin.

X The Bôngoláva range is a very imposing one, rising abruptly from a large plain like an immense wall of quartz, and stretching away north and south as far as the eye can reach. So steep are the sides that Radama had to cut a road for his expedition, which one can still trace slanting up the hills. There is a pass which has been sawn through the range by a small stream; this he avoided. In many places the track which the Sakalava use is only a few inches broad, with a steep descent below, and towering rocks and peaks above, which seem to hang over. In some places there is no foot-hold, and then one has to descend into the stream, upon the banks of which there is a thick growth of ferns and brushwood, in which, the Sakalava told me, they place their best shots if they expect an attack from the Hova. I have often heard the people in Vakinankaratra speak of this pass, which is called Anàlidirana, after the Sakalava raids, as there is no hope of overtaking the band when once they have made this pass. It is a difficult place enough, without expecting enemies at every turn.

The Sakalava call this range Fihòàrambalàla (the place where the locusts come over), and with good reason, for we found the ground in many places literally covered with young locusts not yet able to fly, but all moving eastwards. We kept a very sharp look-out day and night, lest we should be surprised by Sakalava hunters, who would probably have looked upon us as legitimate spoil. We had been warned of this part and the road west of the pass. In almost every valley there were herds of wild cattle feeding, and sometimes we came across a wild boar, but they all scent the approach of man and quickly make off. Guinea-fowl also got up in numbers, but they were generally out of range before we could see them for the long grass, and unfortunately I had only been able to bring with me a few cartridges; however, I shot a wild bull, which was charging at us in an old water-course, but as it was sun-down at the time, and we were separated, and had not found a place for the night, I refused to allow the men to follow him, though he was badly hit and could not go far. This was unfortunate, for we had very little rice left, as we had expected to sight the Sakalava settlements on the sixth day; but next morning, when we were clear of the hills, there were no signs of Sakalava settlements or smoke to be seen in the distance, so we divided the rice, and had but one meal that day and the next.

The descent into the plain on the west of Bongolava is considerable, and the plain must be a good deal lower than that on the eastern side of the range. We also found it much hotter, there being also a good deal of difference in the vegetation, all the valleys being filled with large palms of various kinds. I think some were quite ninety feet high. There were also other large trees, with a very thick undergrowth of creepers, bamboos, etc., intertwined like huge nets; this often made our travelling a good deal more difficult than before. Some of the valleys in which we encamped were most beautiful, the bright blossoms of the creepers reaching right over the tops of the trees. We now began to see many brilliant birds of various colours, some of which I recognised, such as the "cock-of-the-woods" with his long bill, the hoopoe, the *traràraka*, ground pigeon, and the ibis and flamingo later on, but many I had never seen before. I made a collection of skins before returning, which unfortunately were lost,

On the seventh day we had only enough rice left for one meal, and we were all very weary and footsore with the rough travelling; but to think of going back was out of the question, we must push on. The men organised a hunt for wild cattle, but I could not get near enough for a shot, and the calves were too fast for my dog or the men; so we found ourselves more tired than ever after it. We pushed on, but how we got through the next two days I hardly know; fortunately we found water pretty frequently, or we should not have kept up at all, with the terrible heat and mosquitoes by day and night: short round-mouthed ones by day sticking on one in every possible place by hundreds, and long-mouthed ones by night burrowing their trunks through one's clothes when driven off from face and hands. The men found a creeper which tasted like ginger, and we all took a few pieces in our pockets. Very soon what few sandals there were amongst us were eaten up, one man having been bold enough to try his after toasting them. The poor fellows drew in their waist clothes tighter and tighter as they got more and more hungry, and I tried to make a joke of it one evening, when one of them answered: "We cannot do anything for the inside, we must do what we can for the outside." One man, who was very frightened, used to cry to his father and mother, and I heard him add a vow that, if ever he got home again, which evidently he did not think likely, he would never follow a white man again.

At last we got a sight which gladdened us, for stretching away far below us for many miles southwards was the valley of the Mania river, and away to the north the Mahajilo river like a ribbon of silver; it was still some miles off, but we knew we must be within sight of the Sakalava country, though we could not yet distinguish any settlements. The Mahajilo and Mania unite, making a very large river, which proceeds through another range of hills westwards towards the sea; this we recognised as the Tsiribihina; and hungry and done up as I was, I felt proud to be the first European that had ever crossed that wilderness and looked on that magnificent view.

The plateau on which we stood overlooked the valley of these large rivers, which valley is about twelve miles across, the west side being shut in by the Bëmaràha hills, which run north and south in a straight line, with little variation in height, and are covered with forest. The valley is so densely covered with vegetation, consisting chiefly of Tamarind trees, which grow to a considerable size, the *Sakda* (a tree with fruit allied to the "Tahiti Apple"), Bamboos, and several kinds of palm, that the settlements of the Sakalava cannot be seen until one arrives quite close to them.

We had arrived in the Betsiriry country. Now arose the serious question, would these people receive us in a friendly way or not? My men were all in a terrible state of excitement and fear, and I had much difficulty in persuading them to go on. We looked anxiously for the man who had engaged himself as our guide, and who was supposed to know something of the Sakalava. He had gone ahead to let the nearest chief know of our arrival and friendly disposition. Later on I found this fellow to be a slave trader, which accounted for his knowing some Sakalava who do a brisk trade with the Swahili Arabs in slaves.

The man returned with a messenger from Mosheo, the border chief, to say "we might go forward and should not be killed;" but this

assurance was soon qualified by the head of a band of warriors, who received and took charge of us in a very literal sense, as they gave us to understand that we should be treated as Toëra, their king, and Mâhantanty, the principal chief, should direct. We were guided down into the valley, the descent being about the same as that on the eastern side, the hills on this side being called by the Sakalava Ambâtomitingy. We soon found ourselves among a number of Sakalava, who were much concerned about our visit; we could not understand what they said, but we found interpreters in the Hova slave girls, who are to be found in every settlement. We found out that they were sending out trackers to see if we had come alone, or were introducing a Hova expedition. We heard that we had been seen for some days, and they had been warned of our approach. No doubt some of their hunters had seen us on the way. As no European had been here before, my appearance caused much surprise: my hair, eyes, clothes, and boots were the source of much amusement, but yet they did not seem satisfied that I was a European; and after we had been handed over to a band for safe keeping, and had been told not to leave the little hamlet, I was requested to show my feet, arms, and chest, which seemed to satisfy them that I was not a Hova in disguise. We too were equally surprised at the appearance of the people, their painted faces, ornaments, and savage looks, and all we saw around us, but were more interested in obtaining food. A little tea was all that was left of our things. Now came the difficulty; we found money of little use, as the only idea the Sakalava seemed to have of it was to drill a hole through the dollar and use it as an ornament; and a pretty bead would often go further than a five-franc piece. At first no one seemed inclined to help us, some evidently objecting to our reception and looking as if they would like the job of killing us. We tried to make Mosheo understand that we were in want of food, while he tried to make us understand in return that we were under great obligation to him already, but our store of beads and presents was too small to open before him and all his men, as we should meet bigger men soon. The heat was terrible, and I do not think any day has appeared so long as that one seemed to be, though we were all very thankful to have got across the wilderness safely and to have been received at all. When it was dark, and only those who had charge of us were left in the place, we persuaded the head man to give us food, a few beads to his principal wife and a present for himself helping to make our demonstrations clearer to him; and when the dancing and singing in the village commenced, which is to be heard almost every evening in the Sakalava settlements, some one suggested that the Hova (referring to my men) should dance. Poor fellows, they were more inclined to cry, but fortunately we had a professional dancer amongst the men, and with a piece of bark for a drum, and the others singing and clapping their hands to keep time, they gave the popular native 'hawk dance' to the great delight of the Sakalava, who dance nicely, but in a very different way. We soon heard the Sakalava calling out for bananas, etc., lest the dancers were hungry, and very soon my men were cooking food for themselves. We found the green bananas when cooked very good eating, rather like potatoes. After this, wherever we went, we had dancing, as the fame of my men went ahead of us, and so we generally got plenty of food. I saw some Sakalava even put

down their guns and spears to look at the dancing, which was about the only time I ever saw them do so. Sometimes they brought a kind of rum with the fruit, but this they kept among themselves, as I let it be understood that it was tabooed by us. After three days we were treated much better and had more liberty; this was owing to the answer having come from the king, saying we were to be treated in a friendly way, but that my men were not to stay more than a month.

The tribe called Betsiriry are a mixed people, partly Bâra, with a sprinkling of Mozambiques, who have come as slaves, a few Sakalava, and a good number of Hova from Mândridrâno, who escaped after the rebellion in that part some years ago; but they all paint and ornament themselves in a most barbarous way like the Sakalava, so that it is hard to distinguish them, unless one is close enough to examine the eyes and nose which, in the true Sakalava, are very Arab looking. The Betsiriry live on the eastern side of the Mania and Mahajilo, i.e. between these rivers. I gathered that they took their name from the thick undergrowth found there, the name coming from the root '*tsiry*' to grow.\* Their chiefs and head men are either Sakalava or Bâra.

We crossed the Mahajilo, which is a large river, and stayed a few days with an old chief on the slopes of the Bemaraha hills. He treated us well and seemed to listen attentively when I addressed his people. We saw several strange customs during our stay here, for example, the *fâto-drâ* (blood covenant), into which this chief wished to enter with myself, and the ceremony of exorcising an evil spirit from a sick warrior, who was placed on a platform raised about sixteen feet from the ground, and seranaded night and day by bands of singing women and men, who made a terrible din and fired off guns constantly, and drank so much rum that the place was in a terrible state. This poor fellow was suffering from a chest complaint, but the native doctors resented my interference, though I had no lack of sick people, for whom I did what I could. We had hoped to be able to visit the king's town, but I found it another two days' journey, owing to the hard travelling in the forest, and I heard from several that I should only be allowed to go alone, which I should not have minded, but my men were not in a state to be left, for more than once I had difficulty with them, as the Sakalava have no love for the Hova. However, we were treated fairly well wherever we went, and I had several opportunities of speaking to numbers of Sakalava, who evidently have much respect for Europeans, though they seemed surprised that I could not, or would not, make gunpowder for them. Once we had a difficulty in keeping out of a feud, for after their rum-drinking there is always more or less fighting and bloodshed. We found that Sunday, which for some reason they call the *triza day*, was the day for these drinking bouts, when different chiefs met and generally quarrelled. On another occasion we were invited to a great ceremony of sacrificing to an idol, which was reported to have done some good deed, but we did not go, though we heard enough of the festival at a distance. From all I saw I should say that most of their religious beliefs and customs are African, such as their splitting of the ears, painting their faces and chests, tatooing, and ornamentation of their hair with rows of crocodiles' teeth, wire, beads,

\* Is it not rather from *iz*, *manv*, and *avavy*, a kind of wild duck?—Eds.



etc., as well as their lazy habits, yet the Sakalava women are much more like the Tamil women than the African type.

We found small beads of different colours in great request; they use these to ornament their head-dresses, as well as for necklaces, and bracelets; also metal rings and chains, which they use as anklets, were sought after. The women seem to paint themselves more than the men, and very hideous they make themselves. This custom seems to serve two purposes, at least amongst the men: it is considered ornamental, and at the same time, it is a good disguise; and where there is so much fighting and consequently so many enemies, it is advantageous to have a good disguise ready to hand. Often we failed to recognise the people with whom we were quite friendly when they had changed their yellow and red stripes to crossbars and semicircles of blue and white, with a different headgear.

We found the report of a race of dwarfs living near the west coast confirmed; they are called *Behósy* by the Sakalava, and are to be met with in the Bemaraha hills. The Sakalava say they were found in Madagascar by their ancestors and are the same as the *Vasimba*, which the Hova are reported to have driven out of Imerina. I saw a number of these on the hills, a Sakalava pointed them out, but they were travelling fast and were too far off to distinguish clearly. We heard a good deal about them from the Sakalava, who do not consider them to be ranked with ordinary human beings. They are said to live in caves, the mouths of which they hide with great care, and are said to take to the trees when these caves are unsafe. They use little or no fire for cooking purposes, and eat fish, which they dry in the sun. They talk a gibberish which the Sakalava cannot understand, but they have very little to do with them. They are very short, and some, if not all, are reported to have a growth of hair on their bodies. How far these reports are true, I cannot say, but that there is the remnant of an old race of aborigines living in these unexplored mountains, and that they are very much lower in the scale of humanity than even the Bara and the Sakalava, I think is quite certain. x

Time prevented our going down the River Tsiribihina to the sea, which would have taken about a day and a half from our furthest point west, though by foot it would have taken a much longer time, owing to the bad travelling through the forest. Before starting back, I promised many of the friendly Sakalava that I would return after three months, which I was able to do in September and October of the same year, and, I am glad to say, without the privations and uncertainties of the first journey, as I was able to get enough porters to take all necessaries. We went by the same route, and were well received, and visited our old friends and several new settlements, I cannot call them villages, as the Sakalava have a custom of moving to some other spot when any important person dies, so that their houses are very simple. In some places we found most extraordinary idols. We met Mahatanty, the principal chief of the tribe; he is a splendid fellow, and about the tallest man I have ever seen.

I was beginning to think I should be successful in planting a mission in the very heart of the Sakalava country, when a most unfortunate thing occurred which made things very difficult. Six of the men who had carried rice for us refused to stay with us when we had arrived in the Sakalava country, and in spite of our remonstrances, they started

home, but after a few days, one of them arrived at the place where we were staying so haggard that I hardly recognised him. He said the party had been attacked, that some had been killed, others made prisoners, and he was the only one who had escaped out of the six. Later on we heard that two had been taken south of the Mania by a band of hunters. We could get no satisfactory information about the others; no doubt two were shot down, but the others got off, though only this one made his way back to us. This unfortunate affair upset many of my plans, one of which was to go to see Toera. But I could not take all my men, and they positively would not be left, so I abandoned my project. We were persuaded by friendly chiefs not to attempt our old route on our return, as it was possible that we should be attacked; and as I did not wish for fighting, we went north-east to Manandaza and home by that road. I think we saw more wild oxen on this road than on our former route. We were more fortunate too, and not only shot many oxen, but left plenty of beef in our encampments for those who might follow us, though travellers are few and far between in this part of the country.

We saw a good deal of the slave trade which, I am sorry to say, goes on continually in the west of Madagascar; no doubt fewer Mozambiques are brought in than formerly, since they are not saleable in the Queen's dominions, but women and children stolen away from the centre of the island are in request, and numbers of them are to be found in every Sakalava settlement; some are slaves, others are concubines, and all waiting till the Arabs, or half-breed Mozambique Arabs, should come and exchange guns and powder for them. I heard that a good-looking girl would be exchanged for four flint-lock guns, which seemed to be the highest price ever paid. I think one would have to live several years in the interior of Africa before one saw worse examples of the slave trade than may be seen on the Tsiribihina river. The pitiable sight of these poor women and children, often Christians, and the terrible deeds of cruelty which, when we had a chance of speaking to them, they told us of in tears, are all too sad and shocking to be described here. I would not mention it but for the hope that this magazine may fall into the hands of some who may be able to afford more efficient help than at present exists towards putting down this curse of Africa and Madagascar.

E. O. McMAHON.



## A MADAGASCAR ROMANCE :

## THE ADVENTURE OF M. DE GRENVILLE DE FORVAL.\*

M. DE GRENVILLE is of an ancient, noble, and illustrious family of Normandy, where there are several burghs and estates which bear his name; a branch of which passed into England with William the Conqueror in 1066, where it now possesses very extensive possessions and high dignities. . . . If it were consistent with the objects of this work, it would be a delightful circumstance to dwell on the virtues and extraordinary qualities of this family. I must, however, confine myself to one of them, M. de Grenville de Forval, the second son of M. de Grenville. . . . The want of slaves in these colonies [i.e. Mauritius and Bourbon] renders expeditions necessary in order to procure them. Vessels, therefore, are equipped for the coasts of Africa and Madagascar, and a certain body of troops are sent with them, to favour or support the objects of these voyages. Forval was ordered to command a detachment on a service of this nature on the coast of Madagascar; and being arrived on the eastern side of it, he disembarked his people, and encamped them on the small island of St. Mary, called by the natives Ibrahim (Nòsy Boràha), which is separated only from the principal island by a very narrow strait. Here the communications took place between the persons engaged in this expedition and one of the petty princes of Madagascar relative to the objects of the voyage. Forval, however, was so entirely convinced of the good disposition of the people with whom he treated, that he yielded to the friendly solicitations of the king to remain among them, and accordingly ordered some tents and a small number of soldiers to remove from the little island to the opposite coast. The king, who was called Adrian Baba, loaded him with caresses; and having shewn him his herd of cattle, demanded, in the pride of his heart, if the king of France was so great as him. Forval therefore considered himself as in a perfect state of security; and having entered into his tent, in order to pass the night, he received an unexpected visit from a most beautiful woman, a native of the island, who, after a short compliment of apology for the intrusion, expressed her concern that so fine a white man as himself should be massacred. Forval, who was astonished at the visit, could not help taking notice of the danger which seemed to have produced it. The sooty lady, who appeared to interest herself so much in his welfare, was the daughter of a king, and known by the title of Princess Betsy. On being questioned as to the cause of this visit, she asked him in her turn if he would wish to sacrifice her life to save his own. "By no means," exclaimed Forval; "then," replied she, "I will inform you of a plot formed against your life, if you will promise to take me with you and make me your wife; I will sacrifice for you the throne of my father which is my inheritance; I will abandon my country, my friends, my customs, and that liberty which is so dear to me; and if you leave me

\* The following account is taken from Baron Grant's *History of Mauritius*, and we are indebted for it to the kindness of our frequent contributor, Capt. S. P. Oliver, F.S.A. etc.—Eds.

to their vengeance, I shall be reduced to slavery, which, to me, would be a thousand times worse than death. Promise to grant what I have demanded ; swear that your soldiers shall do no injury to my relations, and I will reveal what it is of the utmost importance for you to know." Forval immediately engaged to grant her request if the intelligence she announced proved to be of the importance she had attached to it. "Well then," said she, "at break of day my father will come here under the pretext of a friendly visit ; and if he breaks a stick which he will hold in his hand, that will be the signal of thy death ; his guard will then enter with their hatchets and will kill thee, and all thy people will be massacred with thee !"

Forval immediately conducted her to a place of safety, nevertheless he was determined to wait till the morning and ascertain the truth of her information. The princess had also added that the signal the king would give for his attendants to retire, would be to throw his hat towards them. He accordingly ordered his soldiers to remain under arms during the night and to keep within their tents. As for himself, he got his arms in readiness, placed a couple of pistols under the covering of his table, and dosed by the side of it with his hand on the pistols.

At length the king arrived, and soon after, having broken his stick, the guard was advancing to the front of the tent ; but the king, terrified at the pistol which Forval held to his throat, cast his hat towards his attendants, who immediately departed. The small party of soldiers which Forval had with him were now drawn up in order of battle. All the negroes had disappeared ; the king alone remained as a prisoner ; nor was he enlarged till the princess was embarked with all the equipage, and Forval felt himself happy in departing from this perfidious coast. Nor was he ungrateful, he solemnly espoused the Princess Betsy, in spite of all the remonstrances of his friends, and he lives happily with her. Her colour was certainly displeasing to the white people, and her education did not qualify her to be a companion to such a man as her husband ; but her figure was fine, her air noble, and all her actions partook of the dignity of one who was born to command. She was a real Amazon, and the dress she chose was that which has since received a similar name. She never walked out but she was followed by a slave and armed with a small fowling-piece, which she knew how to employ with great dexterity, and would defend herself with equal courage if she were attacked. She was nimble as a deer, though stately in her demeanour, but with her husband as gentle and submissive as the most affectionate of his slaves. She behaved to her inferiors with equal dignity and kindness ; and she never went to the most distant part of the island, to pay visits to her family, but on foot ; she nevertheless adopted the elegancies of behaviour with great facility, and her society was very pleasant and full of vivacity. Some years after her marriage, the Princess Betsy, for she was seldom called Madame de Forval, gave her husband a new proof of her affection.

Her father at length died, the kingdom descended to her, and her people, who were ardently attached to the blood of their kings, anxiously wished to see her on the throne of her ancestors. As soon as she was informed of this event, she requested permission of her husband to visit her country. Though such an unexpected request astonished Forval, he did

not hesitate to comply with it ; and as she did not unfold the reason of such a desire on her part, he felt his pride mortified at her conduct, though he kept his chagrin to his own bosom, of which it was a painful inmate.

The first sentiments of Forval respecting his princess had been instigated by honour and gratitude ; but her demeanour towards him, her conduct towards others, and her personal charms, in which her colour was forgotten, had awakened in his heart the most faithful and tender affection.

The Queen Betsy, however, departed for the kingdom as soon as she had received the permission of her own sovereign, while Forval was utterly unable to reconcile the step she had taken to her former sentiments and past conduct. He accordingly waited with the utmost impatience for the return of the vessel which had taken her away, when, to his great astonishment, his faithful wife returned in it, with an hundred and fifty slaves which she had brought him. "You had the generosity," she cried, on throwing herself into his arms, "to marry me, in opposition to the wishes of your friends and the prejudices of your country, when I had nothing to offer you but my person, whose charms, whatever they might have been considered in my own country, were calculated rather to disgust than to please you. You will therefore add another proof of your kindness by assuring me of your pardon for having raised a single doubt in your mind respecting the affection and duty you so entirely deserve from me ; but it was my wish to avoid informing you of the project I had conceived on my father's death till it was executed. It was not the little kingdom which that event transferred to me, nor even the largest empire, that would separate me from you ; my sole design in the step I have just taken was to make you an offer of a small number of my subjects, which is the only part of my inheritance that I can bestow. I have at the same time complied with the wishes of my people in resigning my little sovereignty to the most worthy of my relations."

Such a scene may be more easily conceived than described. Thus Forval found his wife worthy of all his affection, and the present she made him is a sort of fortune in this country.



## MADAGASCAR ORNITHOLOGY :

MALAGASY BIRDS ARRANGED ACCORDING TO THE NATURAL ORDERS,  
WITH NOTES ON THEIR HABITS AND HABITATS, AND THEIR  
CONNECTION WITH NATIVE FOLK-LORE AND  
SUPERSTITION.--PART III.

(Continued from ANNUAL No. XIV.)

## CHAPTER V.—THE PIGEONS, GAME BIRDS, WADING BIRDS AND HERONS.

I.—THE Pigeons and some few allied birds form, in Mr. R. B. Sharpe's system of classification, an Order of themselves, and are divided into three Families, consisting of (a) the now extinct Dodos, of which five species at least lived in the Mascarene Islands until within the last 250 years, but are not as yet known to have inhabited Madagascar; (b) the True Pigeons; and (c) the Crowned Pigeons, the last of which are natives of the Malayan Islands. We have therefore to do with the second only of the three Families, which includes four species found in this island.

Of these Madagascar pigeons not much need be said, as they do not differ greatly in habits from their congeners in other parts of the world. One, however, belongs to a genus (*Funingus*) peculiar to the island; it is a handsome bird, slaty blue in colour, with a tail of claret-red, feet coral-red, with the same colour round the eyes. It is sometimes seen in flocks of hundreds together, but is difficult to obtain, as it is extremely wary. Mr. Cory remarks on this statement, made on the authority of M. Pollen: "I have never found the *Föny* pigeon wary or difficult to obtain. In fact, it is often with great difficulty that I have been able to make it fly so as to get a shot. It feeds in Imérina very much on the fruit of the *Sèva* (*Buddleia madagascariensis*, Lam.) and the *Vbaföly* (*Aphloia theaeformis*, Benn.)." The Painted Pigeon is also a handsome bird, of brown and blueish-grey tints; it appears to be a peculiar species. The other two pigeons are of widely spread species; the Cape Pigeon is much smaller than the other three, but has a very long tail; it is beautifully coloured in shades of brown and grey, and has a curious mask-like patch of black on the face and neck.\* The Southern Pigeon is pale-green in colour.

All these pigeons live in the neighbourhood of the cultivated regions of the island, and commit great ravages in the rice-crops at the time of sowing and again at harvest. Some satisfaction can, however, be taken upon them, since they are all, except the *Funingus*, very excellent eating and get exceedingly fat at harvest-time. The Southern Pigeon is very easily obtained, because, after one of the flock is shot, the others will return again and again to the same tree, so that the whole company may be killed one after the other. This bird's note, says M. Pollen,

\* Mr. Cory tells me: "I obtained the other day a very small pigeon of a dun colour, with purplish iridescent spots, but with no black mark on the face. No native had ever seen it before, and perhaps it may be new. Its tail was long, and the size like that of a sparrow (in bulk)."

Besides its cooing sound, resembles the syllables *hut-hout-hout-hut*. The other pigeons can be easily kept in confinement, but this one soon dies if deprived of its liberty.

Mr. W. Wilson tells me: "The Fôny is now and then found in Mândridràno in flocks of from six to eight birds. The boys easily catch them at roosting time by means of a running noose on the end of a bamboo or *ôàraràta* (a very tall bamboo-like grass). They are very easily reared in captivity, and will eat cooked rice the day they are caught, as if they had been used to it."

The generic name of the *Funingus* or Madagascar Pigeon is taken from its native name of *Fôny* or *Finingo*, also applied to the Southern Pigeon, and probably a word imitative of their cooing notes. The same imitation seems to be also found in the name of *Domôhina*, with many variations, given to the Painted Pigeon. Other names refer to their colouring, as *Foningomaitso*, 'Green Pigeon,' and *Vôromânga*, 'Handsome (or Blue) Bird'; *Vôronaddbo*, a provincial name of the Southern Pigeon, refers to its eating the fruit of the *Addbo* tree, a species of *Ficus*; while the Cape Pigeon has the strange name of *Tsiâzotonônina*, i.e. 'Unspeakable,' among the Tanàla or forest tribes, probably because its more common name had become tabooed or sacred through having formed part of the name of one of their chiefs. This seems confirmed by the fact that the other provincial name of this Pigeon, *Katôto*, is said to belong to "a bird of bad omen" (see *Dictionary* under *Katôto*).

(Some time after writing the above, I found the following in Mr. Cowan's *Bàra Land*. "While waiting not far from the river (the Manânantànana), I got some eggs of a Bee-eater (*Kirioka*), and saw many Pigeons (*Katôto*) flying about. Neither of these two birds are common in Eastern Bêtsiléo. The *Katôto* is tabooed or sacred here, even to its name, so it is spoken of as the *Tsi-tonônina* ('not to be mentioned'). It is a remarkable fact that most, if not all, of the birds common to Eastern Africa and Madagascar are sacred, or regarded with a kind of superstitious fear. Of these the *Katôto*, the Tufted Umbel (*Tâkatra*), the Owl (*Vôronôto*), etc., are examples.")

II.—The Fifth Order of Birds, that of the Gallinæ or Game Birds, is divided into seven Families, four of which have indigenous representatives in Madagascar, viz., the Pheasants, Partridges, Sand-Grouse and Bustard-Quails; while another Family of the Order, that of the Turkeys, has for long been naturalized in the island. There are, however, only five species in these four Families, which we shall notice separately as before.

1.—The Pheasants are represented here by a peculiar species of Crested Guinea-fowl, a handsome bird which is very common in many parts of the island, particularly in the plains bordering the forests. Here it may be seen in companies of from 12 to 20 birds, and often in much larger numbers. It is shy and difficult to approach, unless hunted with dogs, so at least says M. Pollen of the Guinea-fowl in the north-west of the island. In the central provinces it is more easily shot. According to the writer just quoted, the people of the north-western regions catch these birds by forming paths of branches of trees, and at the further end of these they place the traps, towards which they drive the birds. This Guinea-fowl is easily domesticated and becomes very tame, and if not

too old its flesh is excellent. Besides the characteristic marking of the feathers with minute white dots on a black ground, this species has a blue caruncle round the eyes. The hen-birds are said to be bad mothers, leaving their young ones on the ground.

The native name of *Akdnga*, by which this bird is generally known, is said by Mr. Dahle to be one of the few words showing an original African element in the Malagasy language, and is identical with the Swahili name of the bird, an allied species, *Numida vulturina*, being common in South-East Africa. A number of proverbs show the way in which this handsomely marked bird has struck the fancy of the Malagasy, two or three of which may be here quoted. Thus, an assemblage of people who are subject to the same sovereign is termed "*Akdnga tsy ra voblo*," i.e. "Guinea-fowls not of two (or different) plumage," something like our saying, "Birds of a feather flock together." Again, "A Guinea-fowl going into the forest : waiting for the rain to clear off, but caught by a steady downpour." The difficulty of catching the bird is referred to in the saying, "Seeing a beautifully marked Guinea-fowl, and throwing away the Fowl at home in one's house," reminding one that "A bird in the hand is worth two in the bush." And again, the maxim that "Union is strength" is enforced by the proverb, "Guinea-fowls going in a flock are not scattered by the dogs" (that hunt them).

Here is a native fable referring to this bird :—"Once upon a time, it is said, a Guinea-fowl went to visit his friends beyond the forest ; but when he got into the midst of the woods, he grew giddy and fell, breaking his wing. Then he lamented and said, 'To go on, to go on, I cannot ; if I return, I long for my relations.' And from that, it is said, the people got their frequent song which says, 'A Guinea-fowl entering the forest : go on, he cannot ; return, wing broken ; stop where he is, he longs for his relatives'."

2.—One species each of Partridge and Quail are found in Madagascar, the first of these being of a peculiar genus (*Margaroperdix*). This is a handsome bird with black, brown and red plumage, and curved lines with white spots, as its name of 'Striped Partridge' denotes. It is smaller than the English Partridge and is tolerably common, often rising with a sudden 'whirring' flight from just under one's horse's nose when riding over the long dry grass of the open country. M. Grandidier says that it lays from 15 to 20 eggs, and that, according to Sâkalava belief, any one who, having found the nest of the *Tsipôy* (as it is called), does not break the eggs, causes the death of his mother ; but if, on the contrary, he destroys them, he causes the death of his father ! This superstition, as he says, probably comes from the rarity of finding the nest at all. Mr. Cory remarks : "Though the *Tsipôy* lays so many eggs, it only rears small coveys ; the largest I have seen was 12, and that was unusually large. I have been struck with the great preponderance of males over females among those I have shot. At Imântasôa I shot 3, and 2 were cocks ; in 1888 I shot 21 at Ankéramadinika, and 16 were cocks ; and in 1889 I shot 32, and 26 were cocks. This may be owing to the cocks collecting together, as is the habit of some birds."

The *Papélika* or Quail found here seems to be identical with the European species and presents nothing calling for special remark. It also is tolerably abundant, and some native proverbs recognize some of



its habits. It is called *Kibòmby* or Ox-Quail by the Bètsiléo, and *Kibodòlo*, probably 'Owl-Quail' or 'Spirit-Quail,' by the Bàra. About this bird the Bètsiléo have a proverb which says that "The Quail (*Kibo*) delays its proper work in the autumn, and leaves it until the spring," and that then they know by its note the proper time for planting rice ("*Miara-draha lay, koa kibo asotry*").

3.— One species of Sand-Grouse is found in the sandy plains of the western and southern parts of Madagascar, where it is found in flocks of from 20 to 30 in number, but little appears to be known of its habits. Its name of *Gàdragàdra* (or *Gadragadraka*) is probably from a word exactly similar which means 'harshness or roughness of voice,' and so is descriptive of its cry; and so also is another of its names, *Kàtakati*.

4.— The fifth and last bird of this Order found in Madagascar, the Black-necked Bustard-Quail, is very common on the plains, especially on and about a tall grass called *Fantàka*. M. Pollen says that it is curious from the fact that the hen-birds give the name (Black-necked) to the species, and that they are of different plumage and larger than the cock-birds. They go in companies of from 6 to 12 hen-birds, always led by a single cock, who is markedly smaller than his wives. Their food consists of seeds and insects, especially the larvæ of a species of white ant. These insects construct large oval nests, which are fixed to the extremities of the branches of the highest trees, from which they are often detached by the wind. These, falling to the ground, are broken, so that the larvæ become an easy prey to the Quails, who eagerly devour them. The flight of these birds is clumsy, resembling that of the Rails, and they do not fly far, but return quickly to the ground, hiding in the long grass, in which they run with great speed. They scratch the ground to find food, like the domestic fowl, and often fight furiously together.

The young Malagasy often entrap these Bustard-Quails by surrounding a considerable extent of ground, and gradually driving the birds together towards a cage with snares, imitating at the same time the call of the cock-bird. By this contrivance they capture a considerable number of hens. M. Pollen says also that the foot of this bird, hung round the neck, is believed by the Sàkalàva to be an infallible remedy for disorders of the stomach. I think, however, it is more probable that the two words are of independent and different origin, and that the belief in the remedial value of the bird for stomach complaints has arisen from the identity of the two words, a kind of homœopathic principle, of which Malagasy folk-lore and superstition is full of examples, as may be seen by looking at Mr. Dahle's papers on *Vintana* and *Siktáy* ("Destiny and Divination") in *ANNUALS* X., XI., and XII., or indeed by carefully examining the *Malagasy English Dictionary*.

The various names for this bird are all compounds of the word *kibo*, as *Kibòbo*, *Kibotay*, 'Dung-Quail,' and *Kibokèly*, 'Little-Quail.' M. Grandidier relates a story about two young Mâhafàly women having been saved from death by some of these quails, in consequence of which it has become a sacred or tabooed bird to their descendants.\*

\* Mr. Cory tells me: "The nest of the Bustard-Quail is composed of dry grass and is partially domed, which is very curious in a game bird. The eggs have a yellowish ground, heavily spotted and blotched with rich brown; they number from three to five. I was surprised and interested to see that what I had always taken for the cock was in reality the hen-bird."

III.—The Order of the Grallæ or Wading Birds, with its six or seven Families and numerous sub-divisions, is represented in Madagascar by more than half of these, and contains 30 species of birds belonging to the Jacanas, Rails, Water-hens, Coots, Curlews, Sand-pipers, Snipes, Plovers and Turnstones, as well as a Family (Mesites) which is peculiar to the island. On the other hand, the Finfoots, Phalaropes, Oystercatchers, Bustards, Cranes and Trumpeters have here no representatives.

As might be expected, many of these water-loving birds are very numerous in this country, as well as those of the two following Orders, the Herons, and the Geese and Wild-fowl. For although a large portion of Madagascar is, geologically speaking, very ancient land, and is therefore rather deficient in lakes as compared with more recently formed countries, its plentiful marshes, its numerous rivers, and its large extent of sea-coast, with the numberless bays and inlets of the north-western portion, provide abundant nutriment and suitable feeding-ground for this large class of birds.

1.—The first Sub-family of the Rails, that of the Jacanas, is represented here by two species of these birds, the first of which, the White-necked Jacana, appears to be peculiar to Madagascar and the neighbouring islands. With its extremely long toes it walks easily upon the large leaves of aquatic plants, searching for the water-insects which form its food. It dives with great ease and is therefore very difficult to shoot; in its habits and flight it resembles the European Water-hen. It is a somewhat rare bird.

The other species of this genus, the African Jacana, is identical with that found all over Southern Africa from the tropics to the Cape, and it frequents the same localities as the White-necked species, being often found together with its cousin. The native names of this bird, as well as one of those by which the other Jakana is known, are long and rather obscure. Possibly they contain the root *tety*, 'passed through,' 'walked on,' and, if so, would then refer to the habits of these birds in stepping from leaf to leaf of the water-plants. The White-necked Jacana is also called *Vòrontsàranionny*, 'Handsome-bird-of-the-river,' and *Tolôhoràno* 'Water-cuckoo.'

The Sub-family of the True Rails comprises six (or seven) birds, of which the *Rallus gularis* has been best observed. According to M. Pollen's account, this Rail is regarded with great respect by the north-western Sàkalàva, as they believe it brings them rain in very dry weather, so they will not kill it. It inhabits the marshy parts of forests, and in habits resembles the European species. It is very shy, retiring into the bushes on the least alarm, and its loud whistling and tremulous cry is chiefly heard towards evening. These birds are said to be so careful of their eggs and young that they may easily be taken by the hand from the nest; and so also, when they are surprised in places where there is no cover, they prefer to be taken rather than resort to flight. M. Pollen says: "I once saw a hen-bird who would not quit the space near her nest, but kept walking around it, ruffling her feathers, and dragging her wings on the ground in the same way as our domestic hen when defending her young." This Rail's nest is made of rush; it is about six inches in diameter and is fixed on water-plants about three feet above the

ground. The eggs are three in number, yellowish-white in colour, blotched with dark brown, and as large as those of a rook.

The Grey-faced Rail is much rarer than the bird just described, and it inhabits exclusively the forest, often at some distance from water-courses.

Several of the names of these Rails are significant; thus the *Rallus pularis* is called, besides its names of *Tsikôza* and *Tsika* (probably imitative of its creaking note), *Angôly*, doubtless identical with the same word which means 'artifice, deceit, snare,' and so refers to its tricks to escape capture. The same idea again comes in in one of the names of the Grey-faced Rail, *Otrika*, which means 'an ambush,' no doubt from its rapidly taking to cover when hunted. The Madagascar Rail is also called *Hërihëry*, probably from a root meaning 'to look around,' 'to look back.' *Mënamàso* 'Redeye;' *Akôholàhindrano*, 'Water-cock;' *Vôronampômbô*, 'Bran- or Chaff-bird;' and *Fangàlatrôvy*, 'Yam-thief,' are all noticeable native names of the birds of this Sub-family.

Three Purple (or blue) Water-hens are found in Madagascar inland waters, and are among the most beautiful of the birds inhabiting the island. They are of a rich blueish-purple colour, but do not differ much from the European species. Some of their native names, as *Hesëtrika*, *Hoëtrika*, etc., appear to contain a root meaning 'to dip,' 'to plunge,' and so refer to their constantly diving in the waters they frequent. (Or possibly these names may be from another root meaning 'to wander about.') Mr. W. Wilson says: "The Blue Water-Hen has a very powerful beak, with which it can with apparently very little trouble root up the *Hërana* rush, as it grows on the edge of Lake Itasy in water a foot and a half or more deep. It does this for the sake of the tender rootlets which are thus exposed, perhaps also for insects. If caught in a snare of stout string prepared from the fibre of one of the nettle plants (*Agy*), it very speedily frees itself by breaking the snare."

The Crested Coot has for one of its native names that of *Otrika* (like that of the Grey-faced Rail just mentioned), doubtless from its immediately diving when alarmed.

2.—Two species of Curlew are found in the island; one of them is peculiar to Madagascar and rare, and is very difficult to capture. It lives almost always isolated among the other shore birds, and frequents the sand-banks along the coasts. Its cry is very loud and quite distinct from that of the other and smaller species, and it is only rarely found in company with it.

Of the other, or Red-eyed Curlew, M. Pollen says that it is one of the most common birds in Madagascar. "These birds frequent the sea-shore and the margins of rivers, where they seek their food, but at high tide, and when the river banks are flooded, they perch in small companies on the mangrove trees. They are extremely wary, flying rapidly away immediately they perceive any danger and uttering piercing cries. This renders them annoying to the sportsman, who often fires in vain at other more valuable birds,\* since these are constantly alarmed by the loud

\* Mr. Cory, in the annotations he has kindly made on this chapter when in MS., says: "Do you think a 'sportsman' would look out for 'valuable,' or creep up to 'sleeping' birds? Would not 'collector' be rather more in keeping with English ideas of *sport*?" In reply, it should be remembered that M. Pollen and his colleague were rather "collectors" than "sportsmen;" and that as these birds often formed their only animal food, they would no doubt feel justified in getting 'pot-shots' even at sleeping birds.

cries of the Curlews. The best plan is to take them unawares at the time when they perch on the mangroves during the great heat of the day. They may then often be seen sleeping, standing on one leg, and the head buried in the plumage, so that the sportsman can approach very near to them. Their food is aquatic insects, which they draw from their hiding-places with their long beaks." M. Pollen further remarks: "I have never seen a larger number of these Curlews than when staying at Anòrontsànga (N. W. Coast), when they appeared to be assembling together to begin a long migratory journey. My friend Jules Verreaux, however, tells me that they are found in Madagascar all through the year. Their flesh is good and often formed, with rice, our only food."

The native names of these Curlews are obscure in meaning; one or two, however, as *Kèha* and *Kèkakèka*, are probably imitative of their plaintive cry. The latter is also a name of one of the Snipes.

The other birds of this Family of Snipes consist of one species each of Dunlin, Sandpiper, and Godwit, and two each of Snipe and Stilt-Plover.

The Cape Painted Snipe is common in the marshes, but is rarely seen on account of its hiding in the long grass and aquatic vegetation, so that it is difficult to obtain without dogs. The flight of these birds is very rapid and in a zigzag fashion, but it alights every few moments.\* They specially like to frequent, in little companies of from four to six birds, the places where cattle resort, for they find abundant food in the deep footprints made by the oxen in the muddy soil of the marshes where they pasture. The other Madagascar Snipe (Bernier's) is a peculiar species.

The Dunlin is found in considerable numbers on the coast; but M. Pollen says that he has never observed it before October, or later than that month, so that he believes that this bird is not a permanent resident in Madagascar, but only rests here a few weeks in migrating from and to other regions.

The Sandpiper found in Madagascar appears to differ in no respect at all from the species spread so widely over the Old World, and is one of the most common shore birds. It is almost always met with either singly or in couples, and is very easily recognized by the piercing cry which it constantly utters, moving its tail up and down, and running quickly along the shore in search of aquatic insects. The cock-bird, in courting the female, has the habit of marching round and round her, trailing his wings on the ground, and bobbing his head up and down, while the hen-bird remains motionless, observing the antics of her mate. Bishop Kestell-Cornish remarks: "It is curious to observe how these various [shore] birds seem to preserve their habits unchanged in whatever part of the globe they may be found. The Sandpiper is just the same confiding little creature in Madagascar as in England, differing from the birds that haunt our shores and the banks of our rivers only in greater variety of species. And the Curlew retains the same wild cry, and the same objection to finding himself within gun-range, as in England."

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\* Mr. Cory remarks on this statement (of M. Pollen's): "When shooting I have never found this bird's flight difficult or fast, not so difficult even as the large Malagasy Snipe, which is reckoned an easy shot by most men. In proof of this I may state that I have only seen four, and three I killed; the fourth I fired at when very tired and on a day when I had been shooting badly. I should say that for a snipe it is particularly slow and even on the wing."

The two species of Stilt-Plover found in Madagascar appear to resemble European species, but no special notice seems to have yet been taken of their habits and peculiarities. Their native names of *Tapàla* and *Tàkapàla* probably refer to their straddling and awkward gait.

Some other of the native names for this Sub-family may be here noticed. Thus, that of *Tbitòy*, given both to the Dunlin and Sandpiper, is said to be an imitative one. The latter bird's habits, both on land and water, are noticed in its other names of *Fandiasàsika*, 'Sand-stepper,' and *Saosaodràno*, 'Water-skimmer;' and it is also called *Manàboandro*, 'That-which-celebrates-the-day.' It is known by still another name, viz. *Kiborànto*, probably meaning the 'Far-running-Quail.' The Dunlin is also called *Kiboandràno*, 'Water-Quail.' The name of *Rdvardva* given to both the Snipes probably refers to their handsome markings; and perhaps *Féjo* (or *Féja*), a name of the Painted Snipe, has a similar meaning; while that of *Salàly* may come either from a root *làdy* (= *laly*) meaning 'quick of hearing,' or from an exactly similar one meaning 'creeping,' 'skulking.' Another name of Bernier's Snipe, *Voronkàhaky*, doubtless (at least the latter part of it) imitative of its cry, like *Kèka-ka*, just noticed. I will not venture upon an explanation of *Kitànòndro*, the Hova name of both the Madagascar Snipes.\*

3.—Seven species of Plover complete (excepting the peculiar Family of *Mesitinæ*) the number of wading and shore-loving birds found in Madagascar, four of which belong to one genus, *Charadrius*, or Golden Plover; it none of the seven are peculiar to the island, all belonging to widely-read species.

The Turnstone is very common on the shores, and is often seen in companies of from 12 to 30 individuals. Like the Curlews, it immediately warns all the other birds of any approaching danger; and probably the name of *Kitòry*, i.e. 'Proclaimer,' or 'Accuser,' refers to this habit.

Of Geoffroy's Golden Plover, M. Pollen says that these birds come together in the evening, just at dusk, in considerable numbers to seek for food. They run excessively quickly, from which habit comes one of their names, *Kiborànto*, 'Far-running Quail,' and they fly along the surface of the water one after another. All four species of these birds are called *Vikiviky*, no doubt from a root identical in form, and meaning 'run,' 'to leap.' Probably *Vèkovèko*, a name of the Spotted Plover, of similar origin. Other names of these Plovers, as *Vòrombàto*, 'Stone-rd,' *Hitsikitsidràno*, 'Water-Kestrel,' *Vòrondriaka*, 'Ocean-bird,' and *ironjia*, 'Shore-bird' (or possibly, 'Roving-bird'), are all plain enough their meaning and origin.

4.—The last birds to be noticed in this Order are two species which, so far, can only be spoken of by their scientific name of *Mesites*. These birds are considered by M. Grandidier to be sufficiently distinct from all the other Waders to be formed into a special Family, *Mesitinæ*; he terms them "very curious and specialized birds, taking their place between the rails and the Herons." He says further that, "according to the native counts, when the nests of these *Mesites*, which are mostly placed in low situation, are flooded, the parent birds drag them to where they will be free from injury by the water. If any one takes their young, they

\* Is it from *tànontàmona*, or an allied word, meaning 'sitting unemployed,' 'resting idly'?

follow them into the village, and on account of this love for their offspring, they are considered sacred (*fady*) by the Bêtsimisàraka, because, say the natives, they are in this like human beings." There are two species of this bird, the Variegated, and the Unicolored; the former of which is known by the odd name of *Rôatilo*, lit., 'Two-three,' the reason for which is not at all clear.

IV.—The four Families into which the Order of Herodiones or Herons is divided are all represented in Madagascar and include five-and-twenty species belonging to the True Herons, the Storks, the Spoonbills and Ibises, and the Flamingoes. Of these birds considerably more than half the number (fourteen) belong to one genus, the Herons (*Ardea*), which is thus the most numerous represented genus in the island, as will be seen by the tabulated list.

1.—As M. Grandidier observes, the coasts of Madagascar are particularly favourable for such birds as the Herons, especially the north-west and some other localities, with numerous estuaries surrounded by trees. Some of the species being regarded as sacred by the natives are less shy than these birds are in Europe; while others again are very wary and most difficult to approach. In habits and feeding these Madagascar Herons are much like the European and African species, mostly living on fish, molluscs and crustacea, the larger ones devouring reptiles and small birds and mammals, while the smaller kinds are insectivorous. They are often found in companies, including several different species, settled on the trees overhanging or near water, and remaining perfectly motionless for a long time. Some of the Herons appear to be very common, as the Ashy, the Black-necked, the Purple, the Whitewinged, the Garzetta, and some other species, and especially the small White Egret. Others, on the contrary, as the Dwarf Heron, the Night Heron and Ida's Egret, seem very rare and were only seen once by M. Pollen; and others again were not met with at all. (It must be remembered, however, that M. Pollen's travels were confined to the north and north-west of Madagascar.) There are considerable differences in size among these Herons, and also as regards their colouring.

The most common of the Herons, as well as perhaps the most noticeable bird one sees when travelling in any part of Madagascar, is the White Egret or *Vôrompôtsy*, i.e. 'White-bird.' Wherever herds of cattle are feeding, there it will be seen in numbers proportionate to those of the oxen. "These animals it follows to feed upon the larvæ of insects which infest their skin and torment them unceasingly. One may often see these Egrets perched on the back of the oxen and thus clearing them from their tormentors, which sometimes become as large as a plum, and even occasionally produce such exhaustion that the animals die from the effects. For the natives, with their usual inertness, would never think of taking any trouble themselves to free their cattle from these pests. It is therefore not surprising that such useful birds as the *Vôrompôtsy* are highly valued by the Malagasy, and are almost venerated as agents of their god Zànahàry. They cannot therefore see one of them shot by foreigners without much displeasure, and they would think it a kind of sacrilege were they themselves to chase or injure them.\* These Egrets are very fearless of

\* Mr. Cory says, commenting on M. Pollen's description here quoted: "I fancy the

man, allowing any one to approach them pretty near, and only leaving the cattle towards evening, when they repair to any piece of water near them to bathe. At sunset they roost in the trees of the neighbouring woods, leaving these again at day-break to return to the herds. One may often see flocks of five hundred of these birds gathering together at evening before settling on the trees in the outskirts of the forests."

Since the above was written, Mr. W. Wilson, of Mándridràno, who has kindly looked through the MS., has favoured me with the following entomological note as well as criticism of M. Pollen's statement about the cattle ticks and the White Egret in the preceding paragraph.

"One of the reasons why these birds follow the herds of cattle is undoubtedly to pick up the 'ticks' which are always to be found in plenty on Malagasy cows and oxen. But I am very much inclined to doubt whether Malagasy cattle-breeders really regard them as of any *value* for the removal of these pests. The explanation is simple enough.

"There are two kinds of ticks which are found on the cattle, first, the *Kóngopòtsy* or 'White tick,' which is drab in colour, with a soft flabby looking skin. It clings to the skin and sucks blood till it grows and gradually expands to an enormous size, sometimes, but not often, becoming 'as large as a plum.' This is a very harmless tick, which lays its eggs on the surface of the skin underneath the hair. If it is not licked off by the cow, or pecked off by the *Vòrompòtsy* in the fields, or by the fowls when the herd is driven home, it will drop off of itself, it being no longer able to hold on when filled to repletion. The other tick, the *Kóngopisaka* or 'Flat tick' (most likely so named from the remarkable way it has of lying flat on and close to the skin) is a very different thing. It has a reddish-brown body, with greyish spots round the edge of the abdomen, has a very tough skin, and is not easily killed. Its mandibles are small, but exceedingly powerful, and these and its hooked feet are buried in the flesh of its victim, and, if left alone, it ultimately manages to bury nearly the whole of its body in order to lay its eggs under the true skin, causing a severe and painful swelling.

"The animal on which it has fastened itself is completely at its mercy and unable to get rid of it. It requires a couple of strong fingers and some amount of skill to remove it, so tenacious is its hold. Indeed a novice will generally make matters worse by taking away the abdomen of the tick and leaving the head in the flesh to keep up irritation and consequent inflammation. The cow-boys, one and all, in Mandridrano have the disgusting habit of killing them by chewing them! Then, they tell one, they have no doubt as to the tick being dead! The removal of these *always* causes pain, and whereas a cow will stand quietly for the removal of the 'white' ticks, she will kick and butt if the 'flat' ones are touched.

"If a breeder values his cattle, he will frequently herd his beasts to '*manàla kòngona*' (remove ticks), which times are always looked upon as seasons of rejoicing and of mutual congratulation by the clan or family. Lucky days are chosen for the operation. Of the white ticks no notice is taken, but the flat ones seriously injure the beasts.

"Now my point is this: I hardly think that the White Egrets can be 'highly valued' as tick destroyers, since what they do is a mere nothing. They remove the white tick, which is harmless and not feared at all by the natives, because it drops off when it is gorged, but *no animal* will stand even for its

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*Vòrompòtsy* picks off the ticks, which are *perfect* insects. I do not know of any insect larvæ infesting cattle here. Some tribes eat these birds, and always desire one to shoot them for them." M. Pollen's account is, however, so minute and circumstantial that possibly the birds on the N.W. Coast find different insect food from that on which they live upon here in the interior.

own *mpiandry* (cow-herd or care-taker), whom it knows well enough, to remove the flat tick, let alone the Egret, with its very sharply pointed beak. Are not the Malagasy sometimes given to romancing, and is not this an instance of it?

"Many of the natives are glad enough to eat the Egret, which they snare in great numbers. This statement applies also to all the Herons."

When living close to the 'Thursday' market at Ambóhimanga some years ago, we used to notice that a large flock of these Egrets, to the number of three or four hundred, used to gather together at sunset on a spacious *tanjy* or large open space opposite our house. After a few minutes' rest, one of the birds rose, apparently giving the signal, and was immediately followed by the whole flock, which then flew away northward, with rather a slow heavy flight, and settled for the night on the trees on the north-west side of the Ambóhimanga hill, where they would be sheltered from the cold south-east wind. In this position they were very conspicuous for a considerable distance, forming a large white mass on the trees. The birds appeared to come from the marshes about Andsinandriana to the west, where they probably found aquatic food, and so do not always attend on the cattle. It was only during the winter months that they came to Ambóhimanga; in the warm season they remained in the open country.

Besides its very widely-spread name of *Vórompótsy*, this Egret has a number of provincial names, some of which refer to its cattle-loving habits, as *Vonnambr*, 'Ox-bird,' and *Langiroamby*, 'Ox-Heron;' others to its colour, as *Vonankisy*, and perhaps *Sikótry*, variations of the Hova form; one is *Aikandry*, 'the Watchman;' and another, *Kiraka*, probably meaning 'to go after something in a crowd.'

As its name implies, this Egret is of an extremely pure white colour, but the small plume at the back of the head is tinged with pale yellow. This crest, as well as the long feathers, are often used as ornaments by the Malagasy. Their purity of plumage is referred to in one of the proverbs: "Having clean clothing, like the *Vórompótsy*, but he gets his living by picking up scraps." Its mounting on the back of the oxen is referred to in another proverb: "Don't seek to be 'number one,' like a *Vórompótsy*." And again, its sharp-eyed vigilance is noticed in another, which says: "A *Vórompótsy* perched on a crooked branch: I spy him, but he keeps his eye on me."

As for the native names of the other thirteen Herons, almost all are known by the generic name of *Váno*, either in its simple form or compounded with other words. This word *Váno* seems to be from a Malayan and Javanese word, *hango*, a heron, but what is its original meaning is unknown. Another widely spread provincial name for these birds is *Langiro*, or *Dangiro*, also often found in a compound form. Thus we have *Vanuintra*, 'Sky-Heron;' *Vanohi* and *Langirohi*, 'Great-Heron;' *Vanomainty* and *Dangoromainty*, 'Black-Heron;' and *Vanofitsy* and *Langonofitsy*, 'White-Heron.' And so again: *Langironafisa*, 'Palm-Heron;' *Dangironafina*, 'Insect-Heron;' and *Fiti-hana*, 'White-wings.' The bird known by this last name has also the queer name of *Pangaiamotroay*, which may be translated 'Crocodiles' eye-cleaner;' so that this bird probably is one of those that do the same kind offices for the crocodiles that the *Vórompótsy* does for the oxen.



Again, the Plumed Heron is called *Fiàndrivòditàtatra*, i.e. 'Waiter-at-the-foot-of-the-furrows;' while another is called *Vòrompàtsa*, 'Shrimp-bird;' and another, *Vòronòsy*, 'Marsh-bird,' or 'Goat-bird.'

2.—The Family of the Storks contains in Madagascar three species, one of them peculiar to the island. The most well-known bird of this Family is the *Tàkatra* or Tufted Umber, a brown long-legged Stork, frequently seen in the marshes and rice-fields of Imerina, as well as in other parts of the country. This bird builds an extraordinarily large nest, which is visible at a considerable distance. It is placed either on the fork of a large tree, or, perhaps more frequently, on the very edge of an overhanging rock, and is composed of sticks and plastered inside with a thick lining of mud. It is from 4 feet and a half to 6 feet in diameter, dome-shaped, with a lateral entrance, and is divided into three chambers, in one of which its two large eggs are laid. The entrance is by a narrow tunnel on a level with the bottom, and is always placed in such a position as to be difficult of access, though the nest itself may be quite easy to approach. Probably from this conspicuous nest, as well as from the grave and sedate way in which the *Tàkatra* marches about seeking for its food, many native superstitions have gathered about the bird, one of which is that those who destroy its nest will become lepers. And while the Hova and central tribes were still idolaters, it was believed that it was very unlucky should a *Tàkatra* fly across the path along which the idols were being carried; in such case they were immediately taken back to their dwelling-house. Another native superstition is, that if the *Tàkatra* takes the hair of any person from whose head it has just been cut, and uses it as material in building its nest, such person becomes at once bald.

A considerable number of native proverbs refer to the *Tàkatra*, some of which may be here translated. Thus, the plume or crest at the back of its head is mentioned in these: "Stooping down and showing the crest, like a *Tàkatra* stalking after a frog;" "Hair in a large knot, like the *Tàkatra*'s plume." Its habits are noticed in the following: "Going along the stream, like the *Tàkatra*;" and, "A *Tàkatra* by the water-side: not sleeping, but in deep thought;" and its nest in these: "The *Tàkatra* finished a nest, so the Owl gave himself airs;" and, "A *Tàkatra*'s nest entered by an Owl; the stingy one is injured by the evil one." (See also the fable previously given, ANNUAL, No. xiii, p. 90, about the Tolòho cuckoo and the *Tàkatra*.) There is a pun, or at least a play of words, in these two: "*Isay takatry ny aina, hoy ilay namahan-Takatra*," i.e., "Doing one's utmost (*tàkatra*), said the one who was entertained by a *Tàkatra*;" and, "*Tsy ny alahelon-Takatra: raha faly, miara-MITOKAKA; raha ory, miara-MITOKIKY*," i.e., "Like the *Tàkatra*'s sympathy: when you are glad, he laughs with you; when you are sorrowful, he shrinks back with you;" that is, I suppose, that it is all the same to him whatever befalls you, for his note never alters.

Besides the *Tàkatra*, there are two species of Open-billed Stork, one of which (*Anastomus lamelligerus*), according to M. Pollen, is almost always found together with some of the Ibises and other shore-birds. They live in companies of from 6 to 12 individuals, at river-mouths, feeding on crustacea and molluscs, from which habit comes their name of *Famakiakora* or 'Shell-breaker.' This Stork is not confined to the sea-shores,

but is also found in the neighbourhood of the inland lake of Alaotra in Antsihànaka. The peculiar bill of these Storks is also referred to in another of their names, *Falàmakavava*. As for the meaning of the name of the Tákatra, it is probably identical with the root *tàkatra*, 'reached,' 'attained to,' and so refers to stretching out its neck and legs in searching for food.

3.—One species of Spoonbill is included in the Malagasy examples of this Order, and is probably peculiar to the island. Its native names of *Sòtrovava* and *Sòtrosòny* have the same meaning as its English name; while another name, *Fangàdiambava*, means 'Spade-mouthed.'

Five species of Ibis are among the shore-birds of this island, one of them of a peculiar genus, *Lophotibis*, of which M. Grandidier says, that its very different proportions separate it most distinctly from the very homogeneous group of the true Ibises." This bird is chestnut-brown in colour;\* the Sickle-billed Ibis is dark brown; the Sacred Ibis is white, with black head and points of wings and tail; while the Dwarf Ibis is white, with rose tints. Of the first of these birds, M. Pollen says that it generally goes in couples, runs exceedingly fast, flies very rapidly, and perches at evening on the trees, where it utters during the night loud cries resembling those of the Owls. Immediately this Ibis perceives any danger it begins to run, raising at every instant its crest in the same fashion as do our Lapwings, so that it is very difficult to kill. It is often kept by the natives in their compounds together with their poultry.

The native names of these birds must be briefly noticed. In several of them words meaning 'goat' appear, as *Mandranòsy*, 'Goat-bird,' *Fiti-libèngy*, 'Goat-watchman,' and *Voronòsy*, 'Goat-bird.' The Sickle-billed Ibis has the odd name of *Fitosivy*, lit. 'Seven-nine'; and the Crested Ibis is called *Akòholàhinàla*, 'Forest-cock,' and *Akòhovòhitra*, 'Village-fowl.' Other names, as *Lampiro*, *Mefo* and *Kòbabéo* are obscure. The word *Mandrana* seems to be used as a generic name for these Ibises; but whether it is the same word as the verb *mandrana*, meaning 'to indulge,' 'to gratify,' 'to satiate,' etc., I cannot say. (This word is also used in a general way for the Cormorants as well.)

4.—The last bird to be noticed in this Order of Herons is a species of Flamingo. This bird, according to M. Grandidier, is not very rare on the west coast, although it is so more to the north and the east. Mr. Cory also says: "This bird is found in Imerina, particularly at Lake Itasy, where I have often seen it. The flesh is extremely good eating. I have never tasted any meat—fish, flesh or fowl—to equal it." Its native name of *Sàmaka* is particularly appropriate and descriptive, for it means 'disunited,' 'split,' referring to its immensely long legs. Its other name of *Sàma*, or *Sàmaè*, means 'Large-mouthed.'

Mr. W. Wilson remarks as to the Flamingo: "The *Sàmaè* or *Anjom-bona* (so called from its trumpeting cry, *anjombona* being the native name for a large species of *Triton* shell used as a trumpet) is, as seen in *Màndridràno*, an exceedingly handsome bird; it has a white body with a most delicate pink tinge pervading the whole of the under part of the wings. In the adult male bird there is a row of small feathers on the

\* Mr. W. Wilson says: "Is the 'Chestnut-brown Ibis' the 'Glossy Ibis'? It is known by the name of *Famàkisi-fotra* ('Snail-breaker') in Imerina. It has an abominable smell and is extremely difficult to skin."

wings of a distinct magenta colour. The neck towards the head has a similar but paler colouring.

"An adult male bird I had in my possession stood quite four feet high, and even then was not by any means stretched to its full height. They are much larger than any heron I have seen. When on the defensive, these birds make quite a loud noise by sharply closing and opening their beaks, which are long and powerful. A blow from them would inflict a terrible wound. I have never seen more than nine birds together at or near Lake Itasy. When on the wing, they fly exceedingly high."

Speaking of the east coast lagoons, Mr. G. Scott Elliot says: "Occasionally, though rarely, one sees a flock of flamingoes drawn up side by side, shoulder to shoulder, in a regular military line. The pure white line which their bodies form is visible miles away. Near at hand one sees the bright scarlet wing-coverts which form a belt halfway down the white uniform."

JAMES SIBREE, JUN. (ED.)

(To be concluded in our next.)

## APPENDIX TO CHAPTER V.—TABULAR ARRANGEMENT OF MADAGASCAR BIRDS:—ORDERS IV.—VII.

### ORDER IV.—COLUMBÆ: PIGEONS.

FAMILY I.—*DIDIDÆ*: DODOS. *None in Madagascar.*

FAMILY II.—*COLUMBIDÆ*: TRUE PIGEONS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Madagascar Pigeon	<i>FUNINGUS (ALECTRÆNAS) MADAGASCARIENSIS</i> (L.)	Fôny (Bs., Ba., T.)	Finingo (N.S.), Foningomaitao (N.B.)
Southern Pigeon	<i>Vinago (Treron) australis</i> (L.)	—————	Fetiliadabo (N.S.), Vôromângga (S.Co.), Finaingo, Bôaka, Vôronadabo (Prov.)
Painted Pigeon	<i>Turtur PICTURATUS</i> (Temm.)	Domôhina (Bs., Ba., T., Im.)	Domôy (N.B.), Lamôka (N.B., Bm.), Demôy (Antk.), Dêho (Tand.), Dêmodémoka
Cape Pigeon	<i>Oena capensis</i> (L.)	—————	Katôto (Bs., Ba., Antk.), Tsia-zotonônina (T.)

FAMILY III.—*GOURIDÆ*: CROWNED PIGEONS. *None in Madagascar.*

## ORDER V.—GALLINÆ: GAME-BIRDS.

FAMILY I.—CRACIDÆ: CURASSOWS. *None in Madagascar.*FAMILY II.—OPISTHOCOMIDÆ: HOATZINS. *do. do.*

FAMILY III.—PHASIANIDÆ: PHEASANTS.

English Name	Scientific Name	How or General Name	Provincial Malagasy Name
Crested Guinea-fowl	<i>Numida TIARATA</i> (Poll.)	Akanga, and so in all the dialects.	Vitro ( <i>Ba., T.</i> ), Toméandry ( <i>N.S.</i> )
Vulture-like Guinea-fowl	<i>Numida vulturina</i>		Akanga ( <i>Prov.</i> )

FAMILY IV.—MELEAGRIDÆ: TURKEYS. *No indigenous representative in Madagascar.*

FAMILY V.—TETRAONIDÆ: GROUSE AND PARTRIDGES.

SUB-FAMILY I.—TETRAONINÆ; GROUSE. *None in Madagascar.*

SUB-FAMILY II.—PERDICINÆ: PARTRIDGES.

Striped Partridge	MARGAROPERDIX STRIATA (Gm.)	Taipôy	Traotrao ( <i>Bs., Ba., T., Im.</i> ), Trôtrô ( <i>N.B.</i> ), Timpôy ( <i>S.</i> ), Kibômby ( <i>Bs.</i> ), Kibodôlo ( <i>Ba.</i> )
Common Quail	<i>Coturnix communis</i> (Bonnat)	Papêlika	

FAMILY VI.—PTEROCLIDÆ: SAND-GROUSE.

Masked Sand Grouse	<i>Pterocles personatus</i> (Gould)		Gâdragâdra ( <i>Prov.</i> ), Kâtakâtê ( <i>N.S.</i> )
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FAMILY VII.—TURNICIDÆ: BUSTARD-QUAILS.

Black-necked Bustard-Quail	<i>Turnix nigricollis</i>	Kibôbo	Kibo ( <i>Bs., N.S., N.B., T.</i> ), Kibotay ( <i>Bs., T.</i> ), Kibokâly ( <i>Ba.</i> )
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FAMILY VIII.—MEGAPODIDÆ: MEGAPODES. *None in Madagascar.*

## ORDER VI.—GRALLÆ: WADING BIRDS.

FAMILY I.—RALLIDÆ: RAILS.

SUB-FAMILY I.—PARINÆ: JACANAS.

White-necked Jacana	<i>Parra albinucha</i> (I.G. St. Hil.)		Vôrontsâraniôny ( <i>T., N.B.</i> ), Simadêkitatâma ( <i>N.S.</i> ), Tôlôhorâno ( <i>Tamboy</i> )
African Jacana	<i>Parra africana</i> (Gm.)		Tsimâva - titimâva ( <i>N.B., Ank.</i> )

SUB-FAMILY II.—RALLINÆ: TRUE RAILS AND CRAKES.

African Rail	<i>Rallus gularis</i> (Cuv.)	Tsika	Tsikôza (in all the dialects), Angôly ( <i>S.Co.</i> )
Madagascar Rail	<i>Rallus (Bicnis) MADAGASCARIENSIS</i> (Verr.)		Hârihery ( <i>T., Im.</i> ), Tsikôza ( <i>N.S., N.B.</i> ), Kitânôtano ( <i>Sik.</i> )
Grey-faced Rail	<i>Canirallus griseifrons</i> (Gray)	Otrika	Akôholâhindrâno ( <i>Bs., T.</i> )
Dwarf Rail	<i>Porzana pygmaea</i> (Naum.)	Ménamâso ( <i>Bs., N.B.</i> )	Mangânanâhitra ( <i>Bs.</i> ), Vôronampômbo ( <i>T.</i> ), Kitaia ( <i>N.B.</i> )
Waters's Rail	<i>Ortygometra (Zapornia) WATERSI</i> (Bartl.)		
Island Rail	<i>Ortygometra (Corethura) insularis</i> (Sharpe)	Fangalatrôvy	Biry ( <i>Ba.</i> )

## SUB-FAMILY III.—GALLINULINÆ: WATER-HENS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
Purple Water-hen	<i>Gallinula chloropus</i> , var. <i>pyrrhorrhoa</i> (A. Newt.)	_____	Hoitiky, Hoëtrika (N.B.), Arètaka (N.S.)
Blue Water-hen	<i>Porphyrio smaragnotus</i> (Temm.)	Taléva, and so in all the dialects.	Vàtry (S.)
Allen's Blue Water-hen	<i>Porphyrio Alleni</i> (Thoms.)	_____	Hosëtrika, Talëvakèly (N.B.)

## SUB-FAMILY IV.—FULICINÆ: COOTS.

Crested Coot	<i>Fulica cristata</i> (Gm.)	Vantsiona	Otrika (T.), Tsohia (S.)
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## SUB-FAMILY V.—HELIORNITHINÆ: FINFOOTS. None in Madagascar.

## FAMILY II.—SCOLOPACIDÆ: SNIPES.

## SUB-FAMILY I.—NUMENIINÆ: CURLEWS.

Red-eyed Curlew	<i>Numenius phaeopus</i> (L.)	_____	Môntavàza (N.S., N.B.)
Madagascar Curlew	<i>Numenius MADAGASCARIENSIS</i> (Briss.)	Kitànôtàno	Kékakéka (Bs.), Kéha (I.), Môntavàzabé (N.S.), Môntavàza (N.B.)
Cape Painted Snipe	<i>Rhyncas capensis</i> (L.)	_____	Ràvaràva (T., Im.), Fèjo, Salàly (N.S.), Ràviràvy (N.B.)

## SUB-FAMILY II.—TOTANINÆ: SANDPIPERS.

Slightly-bowed Dunlin	<i>Tringa subarquata</i> (Gûld.)	_____	Tôitôy (N.S., N.B.), Kiborandrano (S.)
White-bellied Sandpiper	<i>Actitis hypoleucos</i> (L.)	Fandiafàsika (Bs.)	Saosaondrano (Bs.), Manabondrano (T.), Tôitôy (N.S.), Kiborànto (N.B.)
Bernier's Snipe	<i>Gallinago BERNIERI</i> (Puch.)	Kitànôtàno	Kékakéka (Bs.), Ràvaràva (Bs.), Vòronkàhaky (T.)
Red Godwit	<i>Limasa rufa</i> (Briss.)	_____	_____

## SUB-FAMILY III.—PHALAROPINÆ: PHALAROPES. None in Madagascar.

## SUB-FAMILY IV.—HIMANTOPINÆ: STILT-PLOVERS.

White Stilt-Plover	<i>Himantopus autumnalis</i> (or <i>candidus</i> , Bonn.)	_____	Tapàla, Tàkapàla (S., S.W. Co.)
Curved-billed Avocet	<i>Recurvirostris avocetta</i> (L.)	_____	_____

## FAMILY III.—CHARADRIIDÆ: PLOVERS.

## SUB-FAMILY I.—STREPSILATINÆ: TURNSTONES.

Go-between Turnstone	<i>Streptilas interpres</i> (L.)	_____	Kitôry (N.S.)
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## SUB-FAMILY II.—CHARADRIINÆ: TRUE PLOVERS.

Geoffroy's Golden Plover	<i>Charadrius Geoffroyi</i> (Wagl.)	_____	Vikiviky (N.B., Antk.)
Delicate Golden Plover	<i>Charadrius tenellus</i> (Hartl.)	_____	Kiborànto (N.B.), Vikiviky (Antk.)
Three-collared Golden Plover	<i>Charadrius tricolor</i> (Vieill.)	_____	Vikiviky (N.B., Antk.), Vòrombato (Prov.)
Cattle-loving Golden Plover	<i>Charadrius pecuarius</i> (Temm.)	_____	Vikiviky (N.B.), Kiborànto (Prov.)
Spotted Plover	<i>Glaucola ocularis</i> (Verr.)	_____	Hitsikitsidràno (Bs., Ba.), Vèkovéko (N.B.)
Grey Plover	<i>Squatarola varia</i> (Briss.)	_____	Vòron driaka, Vòronjia (S.Co.)

## SUB-FAMILY III.—HEMATOPODINÆ: OYSTER-CATCHERS. None in Madagascar.

**FAMILY IV.—OTIDIDÆ: BUSTARDS.** None in Madagascar.

**FAMILY V.—GRUINÆ: CRANES.** do. do.

**FAMILY VI.—PSOPHIIDÆ: TRUMPETERS.** None in Madagascar.

**FAMILY VII.—MESITINÆ: MESITES.\***

English Name	Scientific Name	How or General Name	Provincial Malagasy Name
Variegated Mesites	MESITES VARIEGATA (I.G. St. Hil.)	_____	Rôatelo (Bm.)
Unicolored Mesites	MESITES UNICOLOR (Des Murs)	_____	_____



## ORDER VII.—HERODIONES: HERONS.

### FAMILY I.—ARDEIDÆ: TRUE HERONS.

Common or Ashy Heron	<i>Ardea cinerea</i> (L.)	_____	_____
Black-necked Heron	<i>Ardea atricollis</i> (Wagl.)	_____	_____
Humboldt's Heron	<i>Ardea humboldti</i> (Grand.)	_____	Vandánitra (Bm.)
Purple Heron	<i>Ardea purpurea</i> (L.)	_____	Langôrovoánga (Bs.), Dangôro (Bs.), Langôro (T.), Langôrovalâfa
Giant Heron	<i>Ardea goliath</i> (Temmm.)	Vânobè	Langôrobè (N.S.)
White Heron	<i>Ardea alba</i> (L.)	Vânofôtsy	Langôrofôtsy
Garzet Heron	<i>Ardea garzetta</i> (L.)	Vâno	Dangôrofôtsy, in most dialects
White-winged Heron	<i>Ardea gularis</i> (Boak.)	Fôtsiêlatra	Dangôromainty (Bs., T.), Fanga-lamôtiwoay (N.S.)
Ardesian Heron	<i>Ardea ardesiaca</i> (Wagl.)	_____	_____
Plumed Heron	<i>Ardea comata</i> (Poll.)	Fiandrivôditâtatra	_____
White Egret	<i>Ardea bubulcus</i> (Sav.)	Vôrompôtsy (Bs. T.)	Sikôtry (Bs.), Kiriaka (T.), Langôroaomby (N.S.), Vôronôsy, Vôronaomby (N.B.), Vôronkôtsy (Tm.), Vôron-gônts, Kitândry (Prov.), Tinomaritô, Gôadrâno (N.S.), Andêvovôronkôsy (Tand.)
Ida's Egret	<i>Ardea leucoptera</i> Ida	_____	_____
Dwarf Heron	<i>Ardea minuta</i> , var. <i>podiceps</i> (Bp.)	Vôromâtina	_____
Black-plumaged Heron	<i>Ardea atricapilla</i> , var. <i>Rutnerbergi</i> (Afzel)	_____	Vângamainty (N.S.), Vângamainty, Gôadrânokely (S.), Tambakorâtsy, Vôrompâtsa (Bm.)
European Night-Heron	<i>Nycticorax europæus</i> (Steph.)	_____	Gôadrâno (Prov.)

### FAMILY II.—CICONIIDÆ: STORKS.

Tufted Umbrella	<i>Scopus umbretta</i> (Gm.)	Tâkatra, and so in all the dialects.	Tâkahâka (So.)
Open-billed Stork	<i>Anastomus lamelligerus</i> (Temmm.)	_____	Falâmakavâva (I.), Famâkiakôra, Mizôa (N.S.)
Madagascar Open-billed Stork	<i>Anastomus MADAGASCARIENSIS</i>	_____	_____

\* The birds of this Family are included by certain ornithologists in some of the preceding Families of the Wading Birds (Grallæ), but M. Grandidier forms them into a special Family, "taking their place between the Rails and the Herons."

## FAMILY III.—PLATALEIDÆ: SPOONBILLS AND IBISES.

## SUB-FAMILY I.—PLATALEINÆ: SPOONBILLS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy Names
ender-billed Spoonbill	<i>Platalea tenuirostris</i> (or TELFAIRI, Temm.)	Sôtrováva (Bs.)	Sôtrosôny (So.), Fangàdiam-bàva (Bm.), Vòrondioko (S.B.)

## SUB-FAMILY II.—IBIDINÆ: IBISES.

ickle-billed Ibis	<i>Ibis falcinellus</i> (L.)	Manàrana (Tm.)	Kôbabéo (S.), Manàrasóy (S.W.Co.), Fitosivy (Bm.)
acred Ibis	<i>Ibis religiosa</i> (Bonn.)	—————	Fitilibéngy
esser Ibis	<i>Tantalus Ibis</i>	—————	Méfo
Bernier's Ibis	Sacred <i>Ibis (Threskiornis) ethiopicus</i> , var. BERNIERI (Bp.)	—————	Fitilibéngy (N.S.), Vòronósy (S.S.), Manàrasoifôtsy (Tanôsy)
Crested Ibis	LOPHOTIBIS CRISTATA (Gm.)	Akóhonàla, and so also in almost all the dialects.	Akóholàhinàla (Ba.), Akóhováhitse, Tsikôko, Lampiéro (N.B.)

## FAMILY IV.—PHÆNICOPTERIDÆ: FLAMINGOES.

Scarlet Flamingo	<i>Phenicopterus erythreus</i> (J. Verr.)	Sámabé	Saimby, Sàmaka (Prov.)
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## THE FOOD AND FADY OF THE SIHANAKA.

THE Sihanaka tribe, their country, characteristics and customs must be by this time more or less familiar to regular readers of the ANNUAL. Of their manners and customs less has been written than of their country, and scope may still be found for a few remarks on their "Food and Fady."

The Sihanaka are no exception to the rule in Madagascar as to their staple diet, viz. rice, which is plentiful and very easily cultivated; but owing to the imprudence of the people, and probably also to their laziness, the supply sometimes runs short, when they are reduced to considerable straits. Those living on the eastern border of the province on the edge of the forest are in a less fortunate position than their neighbours with regard to their rice-fields, as very little suitable ground is available; and when, to make up the deficiency, they plant manioc and sweet potato, the wild boars chiefly reap the benefit.

But the food of the Sihanaka includes far more than rice and presents great variety and some considerable broadness

of taste, as my readers will acknowledge when they hear that rats, snakes and owls are included in the list of food-stuffs, not to mention crocodiles, and even cats! To be just, however, it is right to state, that of these, only the cat is strictly a Sihanaka dish, its flesh being a delicacy which they compare to goose. The crocodile was not originally used as food, as to eat its flesh seemed a too near approach to cannibalism; but of later years some have come to consider it waste not to consume what is to hand in such abundance. With regard to snakes, their resemblance to eels is the attraction. Rats and owls are only very occasional dishes, and not by any means generally appreciated, but the Sihanaka seem to have something of Radama II.'s turn of mind when he wished to know the distinctive merits of things of all sorts as food, and caused them to be tasted.

Besides these very striking articles of diet, there are others which, to most of us, would be little more inviting, but which are eaten by most Malagasy, viz. the various animals, etc., found in the forest, including the different kinds of lemur, the *fôsa*, the wild boar, and many other creatures. Finally, and in common with the Europeans in its neighbourhood, the Sihanaka find a never failing source of appetising food in the fish and wild fowl of Lake Alaotra, and their free indulgence in the former may prove evidence for the fish theory in leprosy, as lepers are plentiful in the neighbourhood of the lake.

The first division of the title of this paper is a very familiar subject to us all, but as to the word *fady*, it may be necessary to explain that it signifies that which is tabooed. Malagasy *fady* is a large subject, as may be seen from Mr. Standing's interesting paper in the ANNUAL, No. vii, p. 62.

It is a pleasing fact, however, that while writing on the *fady* of the Sihanaka one is treating of a subject which is certainly losing weight with those whom it most concerns, for superstition in Antsihanaka is being gradually cleared away by Christianity and civilization.

As far as I can ascertain there are comparatively few things which are *fady* common to all the Sihanaka; of these few, to work their rice-fields on a Thursday seems to be the most important, as this may in no case be done. To build brick or mud houses is not permitted, death being the supposed penalty in case of transgression. To use hemp, either in the form of cloth or for smoking, is also universally tabooed. The last named *fady* is remarkable from the fact that it is very unusual for the Malagasy to *mifady* (verb from *fady*) anything which is really injurious, and no doubt to smoke hemp is so, for instance, rum is never refrained from on the same grounds that other things are tabooed, that is by entire families and tribes.



Many Sihanaka abstain most rigidly from pork, objecting to use ointment which they fear may be prepared with lard, and even refusing to carry a load which they suspect to contain it; neither may their food be cooked in pots or pans previously used for cooking pork; nevertheless they may eat the flesh of the wild boar, which seems rather inconsistent.

Besides the *fady* common to all Sihanaka, each family or clan has inherited a set of *fady* of its own; so in addition to the universal *fady* for Thursday, there will be another day of the week on which nothing may be taken out of the house, the mats may not be swept, etc., etc. Some families may not sell eggs, and others may not sell anything which they have inherited, excepting cattle. Various foods too numerous to mention are included in this class of *fady*. Others again abstain from tobacco, and there are some insects and birds which may not be killed, and certain woods which may not be used for fuel. The foregoing are family *fady*, but there are some which pertain to individuals only; and then again there are the *fady* of places or *fadin' tany*.

Separate villages again have their *fady*, and certain things may not be taken into them. At Imèrimandroso water-pots with broken rims, and rushes which have not lain over night to dry after being cut down, are *fady*, and may not be taken into the town; also the pad of grass which a woman wears on her head when carrying her water-pot must be perfect, i.e. without a hole in it, or it comes under the same ban. At other places these things would be considered harmless, while other equally innocent practices would bring down all manner of evil on the heads of the inhabitants. Water also has its *fady*, and to carry lard across Lake Alaotra is to ensure rough weather, to pour oil on the troubled waters might then prove a curse, it being too near a relation of the lard.

Besides the universal *fady*, the *fady* of families, of individuals, and of places, we have *fady* for particular circumstances and for certain classes, and finally the *fadin-ody*, i.e., the *fady* of medicines. In sickness it is usual to abstain from eating chicken even before taking the medicine which will require abstinence from a great variety of things. Nursing mothers must *mifady* the flesh of calves if they have not been separated from their mothers, lest they should have to mourn their children as the cows do their calves; moreover they may not eat a certain sort of banana until the baby can pronounce the name of it, neither may they look at a child's corpse. Young women must refrain from eating rice on a certain day every year.

Of all the *fady*, however, the *fadin-ody* seem to be the most onerous, not to mention the preparation of the medicine itself, which sometimes involves twelve or more pots containing many and various leaves, roots, etc., being kept boiling at the same

time. The following are a few of the *fadin-ody* : the eating of anything in the form of herbs or vegetables, fresh beef, fresh fish, chicken, eggs and other wholesome foods ; allowing any one to enter the house of the sick wearing a garment not made all in one piece, or with freshly plaited hair ; or answering any one speaking outside the house. It is also *fady* for the sick to look at the sun rising or setting, or at anything red, or to lie down at sunset. The traders from Imèrina have introduced new *fady* in connection with foreign medicines, such as Iodide of Potassium ; salt, rum and cayenne pepper the people are told to refrain from. The traders do this no doubt to secure a better sale for their wares, for the Sihanaka have little faith in a medicine which has no *fady* in connexion with it. The very latest *fady* which has come under my notice, and one I should think of recent invention, is very peculiar : a child is not allowed to accept a picture, lest it should be followed by European ghosts!

The foregoing are a few examples of the *fady* of the Sihanaka, which are simply legion. It would be interesting to find out the origin and meaning of some of them and thus throw light on a very wide subject. Doubtless we are too ready to put down all such beliefs and fears as are included in this *fady* system to utter foolishness, forgetting how mind and body act and re-act on one another, and thus superstition is strengthened. Illness and even death are sometimes the result of fear, and hence the heathen finds ground for his beliefs. Only Christianity and civilization can do away with this terrible bondage of superstition.

K. P. MACKAY.



## X FUNERAL CEREMONIES AMONG THE MALAGASY.

FUNERAL rites and ceremonies are not the same among all the different races inhabiting Madagascar. Regarded from this point of view, the Malagasy may be divided into two groups : first, those whose cemeteries are hidden in the depths of the forests, or in the midst of rocks, in solitary places, and which are held in great awe ;\* and secondly, those who, on the contrary, inter their relatives by the road-side, and often indeed in the midst of their dwellings.†

\* These are, the Bètsimisaraka and other tribes on the east (with the exception of the Tambahoàka, the Taimôro and the Tanôsy, who have a considerable Arab admixture), and the Tandroy, the Mahafaly, the Sakalava, the Tankarana and the Bâra.

† These are the Sihanaka, the Taimôro, the Tambahoàka, the Tanôsy, and especially the Hôva and the Betsileo.

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Wooden coffin discovered by M. A. Mather, at Bluff Cemetery, town of Bluff, Kansas  
(1/10 nat. size, in *Museum of Nat. Hist.*)



Wooden coffin found by M. A. Mather in a sepulchral  
cave in the island of Manihouque,  
(1/10 nat. size, *Musee d'Ethnographie.*)

3. III.



Coffin cover (wood) discovered by M. Marche in the Island of Marinduque (1/10 nat. size., in *Musée d'Ethnogr.*)

g. IV.



Coffin cover ornamented with carving of a crocodile, Island of Marinduque. (1/10 nat. size, in *Musée d'Ethnogr.*, *Coll. A. Marche*).

g. V.



Betsimisarakas Cemetery (after a photograph by M. Grandidier.)

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The majority of these place the dead in the hollowed-out trunk of a tree, which they cover with a lid in the shape of a tent, or rounded roof; the Hova, however, simply wrap the corpse in *lamba*, more or less numerous according to the wealth of the family; and it appears that the Bâra content themselves with placing the corpse perfectly naked upon the ground. Besides this, however, the Malagasy always immediately proceed with the toilet of the deceased, the nearest relatives of the same sex washing the corpse, dressing its hair, and wrapping it in new cloths.

The two principal eastern tribes, the Bètsimisaraka and the Tanàla, as well as the Tankarana, the Tankoàla, and certain tribes of the Bara, do not bury the coffin; they place either simply on the ground, or on a little framework surrounded by a palisade and covered with a pent roof, or in a fissure of rock; but all the others, that is to say, the greater part of the inhabitants of the island, place it in the ground and cover it with a heap of stones of rectangular shape. The head of the corpse is turned towards the east,\* and they enclose in the tomb various articles, such as earthen vessels, pots of incense, cloths, etc.

All the Malagasy hold the notion of impurity in connection with a corpse. No funeral procession can pass near a Sovereign, or even near to his dwelling or the sacred stones; those who have followed it are obliged to purify themselves, and in those districts where the tombs are placed far from dwellings, every person found in a cemetery is considered as a sorcerer and is punished with death. It is further worthy of notice that the Malagasy have a great fear of, but also a profound respect for, the dead. They think it of the first importance that they should be buried in the ancestral cemetery or tomb; and not only the Hova, but the greater portion, if not all, of the native tribes often bring from great distances the bones of their relatives so that they may be deposited in their native soil. When they cannot recover the body of a deceased relative, they inter in its stead a pillow and sleeping mat, and in any case they erect a funeral monument in commemoration of the departed, consisting of a slab of stone, a timber post, or other structure. A vow to the dead, to the *lolo*, as the coast people term them, is sacred.

There is a custom, as repugnant as it is extraordinary, which is prevalent almost everywhere except among the Hova, by which the corpse is not interred immediately after death; the relatives wait until the body is decomposed, and often collect the putrid liquid which flows out, setting it aside.

\* I have, however, been told that the Sihanaka turn the head of the coffin towards the north, and the Hova place in their graves the corpses of grandparents at right angles to those of their descendants.

It is needless to say that in such circumstances the "waking" of the corpse is far from agreeable, and it is only by drinking neat rum, by burning incense and suet and even hides, that the parents and friends are able to bear the nauseous odour which poison the air. During all this time many of the native tribes offer food and drink to the corpse. This custom is essentially Malagasy, for it is not practised by the Hova, who are of Malay origin, nor by the families of the chiefs of the east coast tribes, who are descended from Arabs or Europeans; it seems to have for its object to prevent interring with the bones the corruptible matter which causes decomposition of the flesh, and which they consider impure.

Funerals are also all over Madagascar accompanied by real feasts, at least in all families who are rich or in easy circumstances. They kill oxen, often in considerable numbers, they drink rum to excess, they eat plenty of rice and meat, they fire off muskets, the whole being interspersed with doleful songs and weeping. The relatives never eat the flesh of the oxen killed on the occasion of the death of one of their own family. Mourning is always marked, either by unbraided and dishevelled hair, or at the decease of Sovereigns, by the head being shaved, coarse and dirty garments only being worn, the people neither washing nor combing their hair, nor allowing themselves to look in a mirror, should they happen to possess one.

Such are, in brief, the principal funeral customs of the Malagasy. We shall now proceed to point out, in the briefest possible manner, the differences which exist between the usages of the different tribes, beginning with those of the north and the east. It is nevertheless well to remark that among certain of them, especially those where Christianity has commenced to exert its happy influence, these old customs are beginning to disappear.

*The Tankarana.*—The Tankarana are accustomed to wrap the dead either in an ox-hide, or in split bamboos, or in rabannas (*rosia* cloth), which they tie round with cords of *rosia* fibre, and leave them exposed for a long time under a shed, where they do not cease to burn various resins in little clay vessels. Beginning on the third day, they frequently tighten the cords, until there is hardly anything left but the bones, which they afterwards place in a hollowed tree trunk, generally of rather small dimensions. This coffin, closed with a lid formed like a roof, is then carried to a solitary spot, usually an uninhabited island, where it is put in a hollow of the rocks, or simply on the ground; a supply of provisions is placed near the deceased. The coffins are renewed when they become decayed from age. The accompanying engraving (fig. I) represents one of these coffins, which has been recently



sent to the Natural History Museum\* by a (French) naval officer, P. Germinet, commander of the *Romanche*, and which comes from the little rocky islet called Nosy Loapāsana, whose name signifies "hollowed out by tombs."†

This coffin, cut out of a tree trunk, measures 5 feet long by 1½ in. broad; the cavity which has been hollowed out of it is 4 feet long by 5 in. to 6 in. wide. At the place for the head, two processes increase the width to 6½ inches. The lid, in form like a roof, is 5 ft. 4½ in. long by 9 in. broad; it is ornamented by a zigzag pattern cut in relief, which follows the edges, the ridge, and the hips (so to speak) of the roof-like cover; also by a transverse strip of herring-bone ornament at about the middle of the length and meeting at the ridge, and with four small circles with cross lines cut in them. The lid fits into a rebate formed all round the hollow of the coffin, and which forms a projection of a little more than ½ inch. The general form of the coffin is in all respects similar to that of the wooden sarcophagi which M. Alfred Marche has discovered in the burial caves of Marinduque and of other small islands near Luzon in the Philippine Archipelago.

Inside the coffin, the skeleton, which is that of a young person of twelve or fourteen years of age, is very nearly in exact position, the head being seen at one end, and at the other the bones of the legs and feet. The rest of the body, evidently compressed transversely and mouldering in its wrappings, shows some of the bones more or less displaced in the midst of the remains of *refia* and other cloths, which are still tightly bound by *refia* cords. At the foot of the corpse are three small vessels of baked clay mounted on a stand, which must have served for the burning of perfumes during the ceremonies preceding the interment.‡

\* At Paris. This paper was written more than five years ago.—Eds.

† This islet is situated at the head of Diego Suarez Bay; the maps show it under the name Ile du Sépulchre.

‡ It is not without interest to notice here that this example, buried in a coffin resembling the ancient sarcophagi used by certain tribes of the Philippines, presents the exact characteristics of cranium common to the Indonesians. M. Hamy, who has taken the principal measurements, is stated, indeed, that the cranium is very plainly brachycephalic (diam. ant. post. 168 millim., transv. max., 143; ind. cephal., 85.1).

This exaggerated brachycephalic character cannot, in his opinion, be attributed, except in a very small degree, to the age of the example, the cephalic index never rising, among the young negroes of Africa, above 78. This brachycephalism is, besides, in harmony with the existence of a large occipito-parietal plate, such as one meets so frequently in crania from the Indian Archipelago. The vertical diameter is, at the same time, sensibly inferior to the transverse, a circumstance which is not usual among true negroes.

Here are, in addition, the principal measurements given by M. Hamy as to the cranium from the tomb at Nosy Loapāsana: Circ. horiz. 496 millim.; diam. ant. post. 168; d. transv. max. 143; d. basil. brgm. 138; ind. cephal. 85.1; 82.1; 96.5; front. min. 110 millim.; max. 120; iorb. ext. 102; bizygom. 124; height of face, 76; breadth of orbit, 37; height, 36; length of nose, 46; breadth, 26.

Three adult skulls, collected at the same time and at the same place by M. Germinet, give the following means of the respective dimensions: Circ. horiz. 504 mm.; diam. ant. post. 176; transv. max. 141; d. basil. brgm. 136; ind. cephal. 80.1; 77.1; 96.4; front. min. 106; max. 118; biorb. ext. 108; bizyg. 131; height of face, 90; orbit, breadth, 39; height, 36; nose, length, 54; breadth, 27.

Among the chiefs of the Tankarana, the ceremonial is somewhat different. The corpse is exposed on a stage of bamboo hurdles, sheltered by a roof, and covered over with aromatic herbs and hot sand, which the attendants constantly renew until complete mummification is effected. It is at length deposited in a coffin which is anointed with a mixture of grease, rum, and salt. The putrid liquid which exudes during the operation just described is received in vessels placed under the stage, and the slaves of the deceased chief anoint their bodies with it from time to time.

*The Betsimisaraka.*—The Betsimisaraka keep their dead in their houses for a long time, and the products of decomposition are received in a vessel to be buried at a distance, in a place where the relatives erect a stone, to which they afterwards come frequently to offer prayers. A lamp burns night and day at the head of the corpse, and during all the time of its being exposed to view, the widow ought no more to leave the funeral couch than she would do if her husband were still living. The coffins, which are formed of a hollowed-out tree trunk with a roof-shaped lid, are placed in a dense wood,\* and laid on the ground in regular order at a little distance one from the other, as shown in figure V. At the head they generally place various articles which belonged to the deceased, especially a bottle of rum, a very natural offence in a country where drunkenness is a universal vice. Certain families, however, place their coffins higher up, on a little stage, and construct a shed to protect them from the rain and the sun; in these cases every corpse has its separate house. Others place the corpse in the hollowed-out trunk of a tree, resembling a barrel, of which both ends are closed by circular pieces of wood.

The customs followed at the decease of a chief are altogether different, for the interment follows immediately and by night, without any notice being given to the people of the event; the news of the misfortune which has happened to the tribe is not in fact announced until much later. It is well to remark here that the Betsimisaraka chiefs are of foreign extraction.

*The Raminia.*—Among the Ranomema, who at present inhabit the district between Finantira and Marohita, and are descended from the inhabitants of that part of the east coast where, in ancient times, Arabs landed under the leadership of Raminia, it is customary to place the corpses on the roadside. A hole is formed to receive the liquids coming from the decomposition of the body, and the place is marked by means of a piece of rock, to which the children of the deceased come to offer their prayers. The cemeteries are relegated to the depths of the woods, and no one goes there except at the time of interment.

\* In some places. Aninilo, for instance, the coffins (which are exactly the shape of large dog-kennels, except that the two sides at the rear do not project) are placed, sometimes 30 or 40 together, under the trees by the sea-side. — ED. (S.H.)

*The Tàmbahòaka, Taimóro and Tanòsy.*—The Ròandriana, chiefs of the Tambahoaka, the Taimoro and the Tanosy, are of Arab origin, are interred at night, one or two days after death. During the lying-in state, which takes place in the same chamber (in which the person died), reddish-brown *mba* or cloths are hung up, and a lamp is kept burning at the head of the corpse until it is removed for burial; and, on the first day, food is placed at the side of the bed or bier. The relatives then to the arms of the deceased small strips of paper covered with cabalistic signs and Arabic words. During all this time the news of the event is kept secret outside the royal village, and it is only after a month has elapsed that a white flag is hoisted at the summit of the house where the corpse has lain, informing the people generally of the fact. After this the funeral ceremonies are performed with great pomp. White is the colour for burning in (many parts of) Madagascar, as in the far East. The tombs of these Roandriana, which are called *lonaka*,<sup>1</sup> exactly the same word as that applied to the royal residences, are formed, among the Tanosy, of two slabs of stone, one at the head, the other not so high as the first, at the foot of the tomb. A circular palisading surrounds each tomb, and this is kept in repair by the family of the Zàfindrasàra, who alone are allowed to enter it. The bodies of the chiefs are not placed in a coffin, but simply wrapped in a *lamba*. In former times the taimoro chiefs were interred in a house situated in the village, but this custom has been abandoned.

The commonalty, the *vohitra* or free people, are interred in a coffin which is either on the very edge of the roads (in Antaioro), or in the midst of the woods (in Antanosy). The tombs, which the people call *amónoka*, consist of a trench lined with stones and closed by a slab of stone placed on the ground, with a white flag floating from a pole; and these are not regarded with the same dread as they are among the other coast peoples. Funerals take place, as in the case of the chiefs, very shortly after death. When a woman has come disgraced among her family through violating some of the requirements of caste, she is placed at the feet of her relatives, transversely, instead of by their side, according to the usual custom. The men are placed on the bier on the right side, the women on the left side, but the head is always turned towards the east. The general belief is that the liquids exuded by the dissolution of the body give birth, at least in the case of the chiefs, to a colossal sea-serpent, which they term *Fanànina* or *Fanàno*.\*

<sup>1</sup> See ANNUAL I. p. 76, "Remarkable Bétailéo Burial Customs." There seems a remarkable parallel to this Malagasy belief in the transmigration of the souls of chiefs into animals in the practice of the Samoans, as thus described by the Rev. Dr. Turner; "2

The Tanosy who, not being willing to accept the yoke, quitted the neighbourhood of Fort Dauphin and went to settle in the upper regions of the Onilahy or St. Augustine River S.W., are still accustomed to bring their dead to the land where they formerly lived. Having waited until the bones have become divested of the flesh, they follow the custom of the Sakalava and Mahafaly tribes, and place the coffin undressed a heap of stones arranged in an oblong form. Some families erect near the villages, in remembrance of their dead, wooden posts or pillars bearing on the top a human figure or one of a bird, roughly carved, and on the different sides patterns more or less regular, and figures of animals, such as oxen, birds, and especially crocodiles.† A scrap of white cloth flutters from the end of this post, to which are also fastened the skulls and horns of the oxen killed at the time of the funeral.

*The Tandroy and Mahafaly.*—The Tandroy and the Mahafaly wrap the dead in several *lamba*, and carry them to the cemetery on the day following the decease in a kind of hand-barrow or bed formed of a framework of wood with strips of leather interwoven. The corpse, laid upon the ground, is covered over with earth, and over it is constructed an oblong heap of stones. The rich people have coffins.

*The Sakalava.*—The Sakalava bring the dead out of their house immediately after decease, and place them, wrapped in many *lamba* (even, not odd, in number), upon a stage about six feet high called *lalatila*, the head being turned towards the east, and a piece of cloth being thrown over the corpse, on which are placed articles which must be deposited in the bier. A fire is lighted under the foot of the corpse, and incense is burnt to overcome the effluvia. The women keep at the north-east side of the stage, and the men at the south and south-east. It is customary for the friends of the deceased

unburied occasioned great concern. . . Nor were the Samoans, like the ancient Romans, satisfied with a mere *tamulus inanis* at which to observe the usual solemnities; they thought it was possible to obtain the soul of the departed in some tangible transmigrated form. On the beach, near where a person had been drowned, and whose body was supposed to have become a porpoise, or on the battlefield, where another fell, might have been seen, sitting in silence, a group of five or six, and one a few yards before them with a sheet of native cloth spread out on the ground in front of him. Addressing some god of the family, he said, "Oh, be kind to us; let us obtain without difficulty the spirit of the young man!" The first thing that happened to light upon the sheet was supposed to be the spirit. If nothing came, it was supposed that the spirit had some ill-will to the person praying. That person after a time retired, and another stepped forward, addressed some other god, and waited the result. By and by something came: grasshopper, butterfly, ant, or whatever else it might be, it was carefully wrapped up, taken to the family, the friends assembled, and the bundle was buried with all ceremony, as if it contained the real spirit of the departed" (Samoan a Hundred Years ago and Long before, p. 150).—ED. (J.S.)

† One may see from the accompanying figure (fig. IV) of the cover of a coffin from Marinduque (Philippine Is.) that, in the further East, as in Madagascar, crocodiles are carved on funeral memorials. This coffin lid, as well as two coffins shown previously (figs. II and III), form part of the collections brought by M. Alfred Marche to the Museum of Ethnography at the Trocadero (Paris).

to bring small presents on these occasions. On their arrival, the women squat down opposite the family, which is gloomily silent; then, without speaking, they begin to weep and sob, and all the females present join them in this manifestation of their sorrow. Silence prevails after some minutes until the arrival of a fresh party of visitors. These *talatala* are afterwards destroyed, and the pieces are thrown into water in an uninhabited place. The corpse is carried to the burial-place upon a *kibàny*, or kind of bier or hand-barrow, and is then put, lying on its back, in a coffin formed of the hollowed-out trunk of a tree, which is supported on four feet cut out of the wood, and the bottom of which is pierced with an opening so as to allow the putrid matter to flow away. This coffin is completely covered with another tree trunk, which is a little larger and also hollowed out. The coffin is laid in a trench with various objects belonging to the deceased, such as bowls, plates, boxes, etc., and is covered up with earth. An oblong-shaped heap of stones, of which the length runs east and west, shows the place occupied by the tomb. At the head a small piece of white cloth is fastened to a pole like a flag. There are some families, especially that of the *Vòroniòka*, who do not inter their dead in a coffin; they simply wrap them in a large mat and cover them up with stones. The house of the deceased is abandoned and allowed to go to ruin; no person dares to touch it under any pretence whatever; and any one who, even with knowing it, should happen to use for any purpose the materials of such a house, would be liable to severe punishment, sometimes even to death itself.

Just before death the Sakalava are accustomed to make public confession before their family of the crimes and principal ill deeds which they have committed during their life.

In order to offer their prayers to the *lolo* (spirits) of their relatives, the Sakalava do not go to the burial-place, which they hold in great dread, but to the deceased's house, which has been allowed to fall into ruin.

For princes, the ceremonies are altogether different. The corpse, enclosed in an ox-hide, remains exposed for two months, either in an encampment made for the purpose, under a tent, where incense is burnt night and day, or, in the case of a king, in the midst of the forest, under the care of a particular family. Then it is carried, with great ceremony and festivities, to a royal cemetery, which, in the south-west, is called *Mahàbo* (lit. 'that which elevates'), and in the north-west *Zòmbavòlo* (lit. 'silver shrine'). But previously, if the body is that of a deceased king, the royal relics or *jiny*\* are brought out; these con-

\* This word *jiny* is really the Arabic word *djinn*, which signifies, as is well known, a demon or invisible spirit, having supernatural power.

sist of one of the vertebræ of the neck, a nail, and a lock of hair, and which, placed in the hollow of a molar tooth of a crocodile,\* are kept with religious care by his successor, together with those of the ancient kings, in a special house, which is held to be sacred.

The name which the kings bear during their life may no longer be pronounced after their death; another is substituted for it, often of immoderate length, for it always commences with the word *Andriana* (lord) and finishes with the word *arivo* (thousand), with one or several other words placed between them. Thus Rabôky, who reigned at Bâly, at no very long time past, is never named by his old subjects as other than Andrianahatantiarivo, or 'The lord who can bear a thousand calamities;' Tsimanômbo, the last Bara king of the district of Isantsa, is now mentioned only under his surname of Andriantômponarivo, or 'The lord who is master of a thousand'. When a king bears a name having the meaning of something in common use, or approaching that of some word in the vernacular, this word must no longer be pronounced by any of the inhabitants of the country. Thus, after the death of Vinàny, king of Mènabè, whose name recalls a very commonly used word all over Madagascar, *vilàny*, which means a cooking-pot, the Antimèna no longer call this indispensable article of household use by any other name than by one made for the occasion, viz. *fiketràhana* (lit. 'the boiling utensil'). Any one allowing himself to pronounce the former name of a deceased king would be considered as a sorcerer and punished as such, that is to say, by being put to death.

*The Vazimba.*—The Vazimba, who inhabit Menabe on the banks of the Mânambôlo, seem to be the last relics of the aborigines of the island; their funeral rites therefore possess a very special interest.

After having washed the corpse and clothed it in its finest garments, they place it in a squatting posture upon a *kibany* (a bed or couch), as if it were still living; and the relatives or friends attend it night and day, talking to it, putting into its hand a spoon, full of rice or any other kind of food, etc. Formerly the liquids produced by the decomposition of the flesh were taken to a special place, which was sprinkled with the blood of an ox in order to nourish the *fanànina* or snake, which they believe to be produced from these putrid liquids. Since the conquest of the country by the Sakalava king Lâhifôtsy, these customs have been to some extent abandoned, and as soon as the effluvium becomes too offensive, the corpse is buried. But, at the end of about a year,

\* The tooth of the crocodile intended to receive the *jiny* must be taken from a living animal; they choose one of the largest size, and bind it firmly with strong cords; then they insert between its jaws, at the desired place, a burning potato, and after a quarter of an hour, the coveted tooth can be easily extracted. The animal is then set free.

they take it out of the ground and wash the bones, which are placed in a new coffin, and are then buried for good and all.

*The Béhisotra and Tandrona or Tānkoàla.\**—The two tribes who inhabit the north-west coast between Pāsandava Bay and the Bay of Bēmbatōka have the same funeral customs as the Tankarana. So we learn from a letter recently written by M. Vian, a naval surgeon, who was in the Bay of Māhajamba, and had the opportunity of visiting one of their cemeteries, which is a natural cave, in which he found several coffins about 4 feet long by 1 ft. 2 in. wide. It is certain that the Sakalava chiefs who have settled in the north-west and the north of Madagascar have not exerted on the habits of the inhabitants of that part of the island (Ankoala and Ankarana) so great an influence as they have in the west (Fiherēnana, Menabe and Ambōngo).

*The Sihanaka.*—The Sihanaka take secretly away, far from their villages, those who are ill, and of whose recovery they are hopeless, and place them in a solitary spot, where no one goes but the person appointed to attend them. After death, the corpse is brought into the house, where it lies in state for a certain time, according to the wealth of the deceased and the number of oxen killed. After these ceremonies, the house is abandoned, and the corpse is interred. The family erect to the memory of the deceased a tall pole forked at the summit, like a pair of ox-horns. This is called *jira*, and is placed on the side of a road near the place of interment.

*The Bezanozano.*—The burial monuments of the Bezanozano are composed of a single stone or slab erected at the head and to the east of the trench where the coffin is deposited, and of other stones, to which are fixed, on stakes, the skulls of the oxen killed during the funeral ceremonies. Sometimes tin boxes, or mats which belonged to the deceased are also placed on these stones.

*The Tanàla.†*—The free Tanala, called also Hova, do not inter their dead until they have laid in state for a month or so. For three days they leave the corpse uncovered; but after this they wrap it in red cloths (*lamba*) and place it in a coffin, which they do not carry to the cemetery until the completion of the month. The liquid products of decomposition flow upon the earthen floor of the house and are simply covered over with earth.

\* Behisotra is probably a mistake for Bēmihisatra. The Tandrona live in the north-central part of the island in the neighbourhood of Mandritsara, where they first settled after leaving their original Sakalava home in Menabe. Both the Bēmihisatra and the Tandrona are merely branches or sub-tribes of the Sakalava, the Tandrona having a certain amount of African blood in them. Another important branch of the Sakalava in this part of the island is the Bēmazava.—EDS.

† The word Tanala is merely a descriptive term, there being no one tribe known by that name. It signifies forest-dwellers, and includes several different tribes. The inhabitants the south-east-central parts of Madagascar are doubtless meant here, as these are especially though erroneously referred to by Europeans as the Tanala.—EDS.

During all the time of the lying-in state, the surviving partner (husband or wife) sleeps in the house as if his or her spouse was still living. This custom obtains also among the Betsimisaraka, the Tanosy, and other tribes. The coffin is deposited in a solitary place in the forest, and is surrounded by a palisade of tree trunks which hide its cover.

The Andriana or chiefs, whose ancestors are of foreign (Arab) extraction, are, on the contrary, interred on the very day of their death. The coffin, with a lid in the shape of a roof, and on which is fixed a pair of horns, is carried into the dense forest and placed under a kind of shed. An image, suspended in a corner of the house where the death took place, receives for six weeks all the signs of grief and marks of regret from the people, after which it is thrown into the nearest river with great ceremony. The royal cemetery is visited from time to time in order to renew the coffins when they fall into decay, and also to change the *lamba* in which the bones are enveloped.

*The Vorimo.*—The Vorimo, who live at some distance from the sea between the rivers Mangóro and Mâhasóra, keep the dead in their houses for two or three weeks, and with all their weeping, they feast, eating and drinking to excess. The corpse, wrapped in a number of *lamba* and mats, is then taken to the tomb, which is situated in a solitary place in the forest, and is composed of a little enclosure of stones, in a rectangular form, of which the interior is entirely filled with earth.

In order to offer prayers to their departed relatives, the Vorimo, like the Tanala, prepare near their villages a kind of altar, formed of three or four large stones, on which they place their offerings of rice and other things.

Where a family has been unable to recover the corpse of one of its members, or cannot bring it to its ancestral home, they erect to its memory a slab or pillar of stone, which is called *Tsàngambato* (lit. 'standing stone'). They also place upright stones at the spots where, during the funeral ceremonies, the corpse had been temporarily deposited.

*The Ikongo*\*.—The Ikongo do not erect any tombs; they inter their dead in the forest, and are content with marking the place by the help of a notch cut in the nearest tree. Their funerals are unaccompanied with cries or weeping.

*The Hova.*—The graves of the Hova differ in a very marked way from those of which we have spoken. They are, in fact, family caves or vaults, large subterranean chambers, placed east and west, of which the soil forms the base, and whose sides consist of large slabs of stone, closed over at the top by an enormous one. They are entered by a doorway cut out of

\* *Ikongo* is really only the name of a mountain. The inhabitants living in its neighbourhood are called *Sándrabé* (?), and are merely a sub-tribe of what Europeans call the Tanala.—*Ed.*



the stone wall on the west side of the tomb. The corpses are deposited, wrapped up in *lamba* and mats, some upon the ground, and others upon stone shelves which are fixed horizontally all round (or rather on the three sides of) the mortuary chamber. Those of the head of the family and of his wife are placed along the wall opposite the entrance, i.e. on the east side; while those of his family are laid on the sides to the north and south. Over the cave, the top of which is always raised a little above the surface of the ground, there is a structure, almost square in shape, formed of four walls of stones laid without mortar, the interior of which is filled with earth, while the top is often covered with small pieces of quartz, which are sometimes fetched from a distance.

The building of their tombs is considered by the Hova as a very important undertaking. All the relations, friends, and slaves are called together and leave all their other occupations. It is indeed no easy matter to bring, often from a considerable distance, the five enormous slabs which are to form the walls and roof of the vault. In order to detach these from the bed of rock, they commence by choosing a mass of granite or gneiss (this stone being found extensively throughout the central parts of the island), which naturally divides into layers of a few inches in thickness.\* Here they mark out the shape and dimensions of the slabs required by means of straight lines of dried cow-dung, which are set on fire. When the outline of the slab is thoroughly heated, cold water is dashed over it, producing a crack all along the lines; there is then nothing further to do but to raise the stone by means of levers, and to drag it to the place where the tomb is to be constructed; this is the longest and most difficult part of the whole business, for it may be several hundred, sometimes several thousand, yards over which these heavy stones have to be dragged, across hills and valleys. This work is an occasion of feasting and rejoicing, during which many oxen are killed, and other expenses incurred in feeding those who assist. The Hova tombs are always erected in such a position as to attract attention; sometimes they are even placed opposite the house of the head of the family.

Besides the tombs properly so called, throughout the whole province of Imérina there are to be seen pillars or slabs of stone erected in memory of deceased relatives, and which are called *Tsangambato* (lit. 'standing stone') or *Fdhatsiaròvana* (lit. 'that which makes remembered').

The Hova do not keep the dead in their houses as long as most of the other Malagasy, and they do not usually place

\* This has frequently been stated, but it is incorrect. The slabs are mostly taken from rock masses which show no divisional planes whatsoever, and often run directly across the grain (foliation) of the rock; the splitting is due simply to contraction when cold water is thrown upon them after heating.—EDS.

them in coffins; they wrap them in reddish brown *lamba*, often in considerable numbers; and they carry them to the tomb on a *fàrafàra*, or kind of bier. In former times they placed upon the tomb or all round it—as is still the practice of the Betsileo, the Bezanozano, the Sihanaka and other tribes—the skulls of the oxen killed at the time of funerals; but this custom is now abandoned.

On returning from a funeral, the relatives who have led the mourning wash themselves and purify the clothes they wore by steeping a silver coin in some water over which they have invoked the blessing of God by prayers. At the end of the meal which terminates the funeral ceremonies, all those who have taken part receive also the *àfana*, or sprinkling with this same holy water.

The mourning observances are rather strict. The nearest relatives allow their hair to be dishevelled. The women wear no jacket (*akànjo*) or skirt, wrapping themselves only in the *lamba*. The men go without hats and let their beards grow; they wash only the tips of their fingers, and their clothing must be soiled and dirty. Dancing and singing are forbidden. At the close of the mourning the relatives take part in a meal, at which is observed the *àfana*, or purification of all concerned, by the sprinkling upon them of the water consecrated to God.

The mourning ceremonies are much more severe at the decease of the Sovereign. All the people, both male and female, must shave their heads, with the exception of the heir to the crown and a few favoured individuals. Throughout an entire year no one can sleep on a bed or sit upon a chair; they must sleep and sit upon the ground. All mirrors must be turned with their face towards the wall, for it is not allowed during all the time of mourning for any one to look at themselves in a glass. All labour, except necessary agriculture, is stopped.

From time to time the Hova families practise a ceremony which they call *mamàdika* (lit. 'turning over'), and which consists in going to their tombs to turn the corpses on one side, so that they may not be fatigued by remaining too long in one position. This ceremony is usually observed during the year following the death of one of the members of the family. This is a time of feasting and rejoicing; all the relatives are invited, and, dressed in their best clothing, with music going before the procession, repair to the family tomb in order to visit their dead relations, whom they turn round, as above described, and wrap up in new *lamba*. One day I saw passing, with violins and drums, a procession which was moving the bones of a Hova woman of rank from the tomb of her last husband but one into that of her last husband, where she would finally rest. Throughout several years she had been made to visit these two tombs alternately,

keeping company with each of her deceased spouses for several months; they were now bringing her from the tomb of her first husband, because the wife who had replaced her in the affections of the deceased had died and required her place.

Many of these customs, although practised until the last few years, are completely disappearing under the influence of civilization and Christianity.

*The Betsileo.*—The Betsileo bury their dead in subterranean caves, which are not, like those of the Hova, lined with stone, but are simply excavated in the ground at a depth which is often considerable, and to which access is gained by a long trench, which they are obliged to open at each interment, and which is filled up again afterwards. The corpses are placed upon mats spread on the ground and are covered with a simple piece of cloth. Rich people have coffins with lids in the shape of a roof, and covered with coloured stuffs.

The exterior monument is not always placed exactly above the grave, and varies somewhat in character. Sometimes, as in Imerina, it is formed of four walls from four to eight yards in length and about four and a half to five feet high, but it differs in this point: the interior is not filled with earth, and on the banks of the Matsiatra a tree—*hàsina* or *fàno* (species of *Dracæna* and *Piptadenia* respectively), or some other kind—is planted in the middle. Between the rivers Mania and Matsiatra these funeral monuments are surrounded and surmounted by a number of wooden posts more or less ornamented with patterns cut in relief, and joined together with transverse bars also carved; the corner posts are terminated by an ornament in the form of a vase. In other cases, the memorial is a simple pillar of dressed granite, measuring from 18 inches to 2 feet square, and from 6 to 9 feet high, and carrying on its top a band of iron, bristling with points, to which are affixed the skulls and horns of cattle; or it is surrounded at the angles with carved wooden posts, fixed together with transverse pieces of wood. In some cases it is reduced to a single post, ornamented with carving, and surmounted by the usual vase-shaped finial, and with a wooden stage, to which are fixed the bleached skulls from the oxen killed at the funeral ceremonies.

Some families do not place their dead in the ground; they deposit them in natural grottos, or in caves hollowed out by hand, on the perpendicular faces of certain mountains, places to which no access can be gained except by very lofty scaffolding.

The *Andriana* or nobles among the Betsileo are not interred for some time after their death. About the third day, when the body is already swollen, it is rolled upon planks so as to thoroughly soften the flesh; and on the following day the relatives fasten tightly to the central post of the house with thongs cut from

hides of the oxen killed for the funeral ceremonies, and then make a large incision in each heel. Large earthen pots are then placed under the feet to receive the putrid liquid which escapes from the decomposition of the body. These pots are examined with the greatest care, for the corpse cannot be removed from the house, and no one can work in the fields, until a certain small worm or maggot has made its appearance in one of the vessels. They wait sometimes for two and even three months before being able to proceed with the interment. The vessel is sent up in the grave together with the body, and they arrange a long bamboo, one end of which is plunged into the liquid, the other being flush with the surface of the ground, in order that the maggot, after its transformation into a serpent or *amano*, may be able to come out of the tomb and go and visit its relatives: for the Betsileo believe that the soul of the departed reappears under the form of a reptile. Formerly it was not in the case of the nobles only that these repulsive ceremonies were observed, but now they are entirely confined to them.

*The Bara.*—It appears that the Bara lay their dead entirely naked upon the ground and cover them over with stones: their tombs are not more than from a foot to eighteen inches in height. Certain families, among others those who inhabit the Isalo chain of mountains, also place them quite naked, either in caverns, or among rocks, with the skulls of the oxen killed during the funeral ceremonies: for a third part, and often even a half, of the oxen belonging to the deceased are killed on these occasions. The Rev. J. Richardson found in the western part of the Bara country posts of 3 or 4 feet high, and bearing at their summits rude female figures of the natural size, which were probably placed as memorials of persons who had died at a distant place.

Such are the principal funeral customs of the Malagasy. I have contented myself with describing them in broad outline, without entering into all the details of the ceremonies, for these would have obliged me to exceed the limits assigned to me in this article. We can see from the sum of the facts I have brought together, and shewn by the illustrations given with this paper, that there is a close resemblance between the burial customs of the Malagasy and those of the Indonesians, which afford one more proof, if any were necessary, of the emigration into Madagascar of some of the peoples of the extreme east.

*Translated from the French\* of*

ALFRED GRANDIDIER

BY JAMES SIBREE, JUN. (ED.).

\* *Revue d'Ethnographie*. Paris: 1886. pp. 212—232.

## MR ROBERT TOWNSEND FARQUHAR AND THE MALAGASY <sup>X</sup>SLAVE TRADE.

THE following extract, from *Fifty Years of my Life*,\* Vol. II., pp. 92, *et seq.* by George Thomas, Earl of Albemarle, forms an appropriate and trustworthy sequel to the former notice on General Hall in the ANTANANARIVO ANNUAL of 1888, p. 473-479.

Ensign the Hon. George T. Keppel,† was in January, 1818, serving with the *dépôt* of the 22nd Regiment of Foot when he was ordered to join the Head Quarters of his regiment at Mauritius, and he arrived in that island during the absence of the then Governor, Mr. Robert Townsend Farquhar.

"After three dreary months on shipboard, our sailors thought their reckoning that we must be somewhere in the latitude Mauritius. Even since the early dawn of one day we had been straining our eyes for this speck on the ocean. Just as the sun was dipping below the horizon there was seen on its disk something resembling the profile of a man's head and neck. and! land!' resounded from all quarters. We had caught sight of the summit of 'Peter Booth,' the principal mountain of Mauritius, which, from whatever point it is seen, always presents its singular appearance.

"The next morning we sailed into the harbour of Port Louis. The boat came alongside as soon as we anchored; it was manned by some eight or ten negroes, all of whose backs bore marks of the recent infliction of the whip. They were maroons—runaway slaves—in the temporary custody of the government police—to be returned to their respective owners within a given time.

"The boat which came alongside brought on board two lanterns—*notables habitants*—as they were called. One of them addressing himself to me wished to know what was the general state of feeling in England respecting the important subject which was agitating the breast of every colonist. ....

"During the 'Revolution war' the Mauritians made most successful inroads upon our commerce. It is computed that in the first ten years of the war, the value of British ships and cargoes taken by the privateers of the island amounted to two millions and a half sterling. This profitable venture of course ceased when in 1810 the island surrendered to British arms.

\* 2nd Edition published by Macmillan & Co., 1876.

† Keppel was born in 1799; at this date, therefore, the young ensign, who had previously served through the Waterloo campaign was twenty years of age. The nonagenarian earl is still living, and his record of Farquhar's partiality towards the slave driving portion of the community in the Mascarene Islands is valuable as from a living witness.

"But there was another lucrative employment which was also threatened with deterioration by the capture. The colonists were busily employed in importing negroes from the island of Madagascar—a commodity for which there was a great demand, in consequence of the mortality of the slaves, caused by excess of work and insufficiency of food. An Act of Parliament was in force by which traffic in slaves was punishable by transportation. But the Mauritians were not slow to discover that they had not much to apprehend from a too rigid enforcement of the law on the part of the Governor, Mr. (afterwards Sir Robert Townsend) Farquhar. If, therefore, their slaves could elude the vigilance of the British war-cruisers off Madagascar, the difficulties of landing their victims would be nearly nominal. Farquhar was an almost undisguised advocate for a continuance of the trade. I have before me some of his despatches that were laid before Parliament. In one of them he laments over 'the great deficiency of labourers in consequence of the strict blockade of these islands.' He expresses his fears that 'unless some means be speedily devised for supplying these colonies with hands, they cannot continue in cultivation and must become deserts.' He assures the Minister of the Colonies that 'without a fresh importation of slaves, these islands, he is given to understand, and is led to believe, cannot continue in cultivation.' His Excellency had not far to go in search of persons who gave him to understand and led him thus to believe, for Belombre, the largest slave estate in the colony, was the joint property of three members of his family, one of whom, his aide-de-camp, Captain Thomas Le Sage, was an officer in my regiment, and the immediate neighbourhood of Belombre was one of the favourite creeks of the slavers for running their contraband cargoes of human flesh. The result of this connivance was that, in contravention of the Act of Parliament, fifty thousand negroes were smuggled into the island during the first ten years that Mauritius became a dependency of the British crown (*i.e.* 1810-1820, during Farquhar's tenure of government). Farquhar was in high favour with the Prince Regent and with Louis XVIII. The one made him baronet, the other invested him with the Legion of Honour. It is hardly necessary to add that he was a zealous supporter of the Tory Government. He used to boast in Parliament of the 'series of measures he had passed to better the condition and alleviate the oppression of the slave.' One of these alleged alleviations was the abolition of the public flogging of women. No document was produced in proof of this assertion, for the simple reason that none such ever had an existence. I was an eye-witness of one of these whippings. It took place in the market-place. The poor woman was tied to a ladder placed against the wall of the theatre. The punish-

ment was inflicted by a negro government policeman. Another assertion of Sir Robert was that the Belombre estate was one of the best regulated in the island.

“Now the average mortality of the free black and coloured population in Mauritius from 1816 to 1821 was about  $2\frac{1}{2}$  per cent. By a return laid before Parliament, the mortality among the slaves of the Belombre estate averaged for a series of years 16 per cent. What a cruel expenditure of human life, and what a fearful amount of human suffering do not these figures reveal.

“The year before I arrived in the island, Farquhar went to Europe on account of his health. Major General Gage John Hall, Commander of the troops, became Governor *ad interim*. The new functionary soon became convinced that not only his predecessor in office, but that all those whose duty it was to carry out the provisions of the Slave-Trade Abolition Act, were resorting to every expedient to make it a dead letter. Acting upon these convictions, Hall suspended the Chief Justice and the Attorney General, dismissed several civil servants from their posts, and established domiciliary visits to planters’ ‘*habitations*’ (camps) in search of newly-imported negroes. Remonstrances against his proceedings by the colonists to the mother country procured his immediate recall; and this brings me to the question put to me by the *notable habitant* in Port Louis harbour,—namely, whether the removal of the obnoxious Governor was to be construed into a virtual admission on the part of the British Government that the planters were to have no further let or hindrance to their free importation of ‘hands.’

“In the month of December (1818), General Hall embarked for Europe, having first surrendered his post to the commanding officer of my regiment, Colonel, afterwards Major General, Sir John Dalrymple; and I became so far benefitted by the change of administration that I was appointed aide-de-camp to the new Governor. ....

“Major General, afterwards Sir Ralph Darling, who had been appointed from home to succeed General Hall, arrived in the island early in February (1819), and continued me in my post of aide-de-camp. I now shifted my quarters from Mon Plaisir to Réduit, another charming country house, where I resided till June, when my regiment embarked for England.”

The Earl of Albemarle’s brief experience of Mauritius amply suffices to confirm the account, given two years ago in the ANNUAL, by which Major General Hall’s character, so maligned by his enemies, has been rehabilitated. Future historians of Madagascar should perpetuate the lasting infamy of Farquhar, so unjustly shifted on to the shoulders of Gage John Hall.

S. PASFIELD OLIVER.

## THE FLORA OF MADAGASCAR.\*

IT may be said with perfect truth that the vegetable productions of Madagascar have been, though not thoroughly, very extensively explored, and that the majority of the plants inhabiting the island are now known to science. The country has been traversed by botanists in many different directions, its highest mountains have been ascended, its lakes and marshes crossed, its forests penetrated, and large collections of plants have been made from time to time, which have been examined and described in various publications. Our knowledge of the flora of Madagascar is due, in the first instance, to the labours of Flacourt, Dupetit Thouars, Commerson, Chapelier, Bernier, Lantz, Boivin, Pervillé, De Lastelle, Richard, Grevé, Hilsenberg, Bojer, Goudot, Bréon, Vesco, Grandidier, Thompson, Lyall, Ellis, and others, most of whom collected plants chiefly in the east, north, and north-west parts of the island. M. Grevé, however, gathered many, if not all, of his specimens on the south-west coast; while Messrs. Hilsenberg, Bojer, Lyall, and Ellis explored the botanical treasures of the eastern forests and the central highlands.

Within the last few years our knowledge of the flora of the island has been very materially increased; so that, whereas until recently less than 2000 species of plants were known, there are now (1889) named and described about 4100, though many of these will doubtless prove repetitions when they are properly compared and worked out. Dr. Rutenberg, who, in the year 1878, was probably murdered in Western Madagascar, and Dr. Hildebrandt, who died in Antananarivo in 1881, made extensive botanical collections, chiefly in the north-west and central parts of the country. Mr. Borgen, of the Norwegian Missionary Society, gathered, a few years ago, a valuable series of mosses, chiefly, if not entirely, on Ankaratra Mountain in Imerina. Miss Gilpin, of the Friends' Foreign Mission Association, and Mrs. Pool, of the London Missionary Society, have largely added to our knowledge of the fern-flora of the interior, especially of the forests; and Dr. Fox, of the Friends' Foreign Mission Association, has materially increased our knowledge of the orchids of Imerina. M. Humblot has recently explored the large forest in the north-east of the island. Mr. Langley Kitching, Dr. Parker, and Mr. Cowan have discovered a considerable number of novelties in the Imerina and Betsileo provinces, and I myself have sent to Kew several cases of plants collected in various parts of the island. The greater number of the plants gathered by these various collectors in different localities have been examined by Mr. J. G. Baker, F.R.S., of Kew, and the novelties have been described by him in the Linnean Society's 'Journal' and the 'Journal of Botany.' Mr. Ridley has, however, described the new orchids and a few other plants. The French collections have been chiefly taken in hand by M. Baillon, and the German collections by Vatke, Freyn, Buchenau, Radlkofer, O. Hoffmann, and others.

Botanizing in Madagascar, as those who have travelled in wild and uncivilized regions in other parts of the world will easily believe, is a

\* From the *Linnean Society's Journal*.—Botany, Vol. xxv.



totally different experience from botanizing in England. Your collecting materials are carried by a native, who may be honest or not, in which latter case the drying paper will begin gradually and mysteriously to disappear, and the leather straps with which the presses are tightened will, one by one, be quietly appropriated. For a Malagasy bearer has a special weakness for leather straps, they being largely used for belts; so that both for the sake of your own comfort and the honesty of the men, the sooner you dispense with them the better. As for the dried plants themselves, they are secure from all pilfering; for of what possible use or value they can be, it puzzles the natives to conceive. You might leave your collection in a village for a whole month, and you would find on your return that it was still intact. If, after the day's journey, you sit down in a hut to change the sheets of paper containing the specimens, the villagers will be sure to come in and, standing round in a circle, gaze at you in mute astonishment turning over the plants so well known to them. After a few minutes' silent gaze, there will perhaps be a sudden outburst of amused laughter, or it may be a little whispering, which, if it were audible, would be something to this effect:—"Whatever in the world is the man doing?" or, "What strange creatures the white men are!" Some of the people doubtless think that you are a kind of sorcerer. For these dried plants—whatever can you do with them? You cannot eat them. You cannot make them into broth. You cannot plant them, for they are dead. You cannot form them into bouquets or wreaths, for they are brown and withered. Is it surprising, then, if some of the natives think that you are dabbling in the black art, and that your plants, in the form of some strange and mysterious decoction, are to supply, it may be, a potent rain-medicine, or a love-philter, or a disease-preventing physic? For among the natives themselves there are many herbal quacks, who, for a consideration, are able, not only to prescribe for the cure, and even prevention, of disease, but also to furnish charms against fire or tempest, locusts or lightning, leprosy or lunacy, ghosts, crocodiles or witches. The explanation which I have most frequently heard given, however, by the more intelligent of the natives as to the use of the dried plants is that the leaves are intended to be employed for patterns in weaving.

It is not, then, the natives that you have to fear in regard to your collections of plants, it is the weather—it is those heavy showers that, unless protected with extreme care by waterproof coverings, succeed in soaking your specimens and your drying paper, so that you have occasionally to spend half the night in some dirty hovel in doing what you can, by the aid of a large fire, to save your collection from destruction.

There are many discomforts, too, connected with botanizing in Madagascar, which it is not necessary to mention here. Suffice it to say that all the difficulties and discomforts are far more than outweighed by the pleasure you gain in the exercise—a pleasure which is enhanced by the consciousness that you are probably the first that has ever plucked the flowers from Nature's bosom in that particular locality, and that a large number of the specimens will probably prove to be new to science.

The fullest liberty to gather plants is allowed to the botanist. There are no laws which forbid his roaming at will amid the extensive forests, or which prevent him from breaking off whole branches of trees, or, if

need be, even felling the trees themselves. In the open country, too, he may wander to the right hand or to the left, or in any direction he pleases, without having the uncomfortable feelings and apprehensions of a trespasser. The traveller may occasionally be prevented from collecting mineral specimens, but he is never prevented from gathering plants.

In Madagascar a considerable area is covered by primeval forest. On the eastern side of the island (that is, the part eastward of the highest range of mountains which forms the chief watershed) there is a forest which extends probably 800 miles from north to south, almost, if not entirely, without a break, and which, if what is frequently stated be true, continues round the island, forming a complete, or almost complete, belt some distance from the sea. Whether the forest does thus actually encircle the island is somewhat questionable. There can, however, be no doubt that in the western part of Madagascar there are forests, mostly, I believe, narrow, which run for long distances in a northerly and southerly direction, but how far these are continuous is not yet known. In regard to the large eastern forest, it attains its greatest dimensions in the north-east part of the country. Here it reaches, in many places, from the mountains of the interior right down to the sea, and is probably 60 (in North Antsihanaka perhaps 80) miles in width. If we take its average width on the eastern side of the island at 30 miles and its length at 800, we get an area of 24,000 square miles of forest-clad country, not reckoning the innumerable patches of wood on the lower slopes. If we include these, probably two-fifths, if not one half, of the eastern side of the island is clothed with trees. In the whole of Madagascar, if one may be allowed to make a rough estimate, there will not unlikely be an area of 30,000 square miles of forest-covered country; and if we reckon the area of the island at 228,000 square miles, about one-eighth part of it may be said to be so covered.

It is grievous to relate, however, that the forests of Madagascar are being destroyed in the most ruthless and wholesale manner by the natives. Every year thousands of acres of country are cleared, the trees being burned to the ground, and that for no other purpose than to provide ashes as manure for a mere handful or two of beans, or a few cobs of Indian corn, or a little rice to be grown in the clearing. Moreover, all the towns and villages with Hova Governors are surrounded by palisades, frequently in a double series, made of the trunks of young trees, six or eight inches in diameter, fixed in the ground and placed in contact with each other. I once counted the trees that had been thus used in a certain village, and found that there were about 10,000. These trees, moreover, in many of these places are renewed every eight or ten years. When we remember the great number of villages thus provided with these palisades, we see that many hundreds of thousands of trees must be thus foolishly destroyed within a comparatively few years! Even where stone and lime or other suitable materials are abundant and close at hand, the people prefer, or are obliged, to make these timber barricades, though the forest may be miles away, and though the trees have to be dragged along the ground or carried on men's shoulders, involving indescribable labour, hardship, and loss of time, and forming a much less impregnable and permanent barricade when finished than

would be the case if the other materials were employed. All this seems to a European the very essence of waste and folly. But as though the timber was absolutely of no value, I once saw a road which had been cut through the forest for a long distance, for no other purpose than to allow passage for the dragging of a tombstone which had been quarried in the neighbourhood. To make this road no fewer than 25,000 trees had been cut down! Again, in getting planks for building purposes from the forests, there is most extravagant waste of timber. A tree is felled, and the native woodmen, not having saws, set to work with their hatchets on each side of it until the timber is reduced to the required thickness, and thus each tree, however large, supplies but a single plank. It is truly lamentable to see how the forests, containing, as they do, fine valuable timber, are, in these and other ways, being consigned to destruction. The laws of the country forbid the people to burn or otherwise destroy them; but these laws have been hitherto practically a dead letter, and consequently the area covered by trees is being rapidly reduced year by year. Happily there seems to be now, on the part of the Malagasy Government, a growing consciousness of the immense value of the extensive forests of the island, and, let us hope, a growing determination also to stop the fearful havoc at present going on.

There are now known in Madagascar, as has been already stated, about 4100 species of plants, and although there is still a considerable number of novelties in every fresh collection sent from the island, the percentage of such is rapidly diminishing, and I think it may with certainty be said that the great bulk of Madagascarian plants have already been gathered,\* so that we now have sufficient data to enable us to draw a few general conclusions as to the character and distribution of this very interesting and remarkable flora.

The following figures will show at a glance the number of Natural Orders and genera of flowering plants represented in Madagascar as compared with those known throughout the world, according to Bentham and Hooker's 'Genera Plantarum':—

Total known in the World:	Orders	200,	Genera	7569.
„ „ Madagascar:	„	144,	„	970.

The number of genera here given comprises those only that are indigenous to the island. If we include the numerous plants that have at one time or other been introduced, the total number of the genera would be raised probably to about 1050.

Of the 4100 indigenous plants at present known in Madagascar, about 3000 (or three-fourths of the flora) are, remarkable to say, endemic.

\* In the *Kew Bulletin of Miscellaneous Information* for May, 1888, it is stated that "the flora of the lowlands of Madagascar is very imperfectly known at present..... Mr. J. G. Baker, Principal Assistant in the Kew Herbarium, has for many years devoted attention to the flora of the mountainous parts of Madagascar." This is only partially true. I am convinced that nearly all the vegetable forms found on the east coast of the island, and, at any rate, the majority of those found on the west coast, are now known to science. The flora of the lowlands of the southern part of the country is least known of all. The plants, moreover, which Mr. Baker has examined are by no means only those "of the mountainous parts of Madagascar." They have been gathered in the lowlands as well as in the higher parts of the island, though not perhaps to so great an extent.

Even of the Gramineæ and Cyperaceæ about two-fifths of the plants in each Order are peculiar to the island. There is but one Natural Order confined to Madagascar, the Chlænaceæ, with 24 species, which, however, M. Baillon places under Ternstroëmiaceæ. Of Ferns more than a third are endemic, and of Orchids as much as five-sixths, facts which in themselves are sufficient to give a very marked individuality to the character of the flora.

Of the 4100 known plants, there are :—

Dicotyledons .....	3492
Monocotyledons .....	248
Acotyledons* .....	360
	<hr/>
	4100

The following list shows the number of species in the Orders most largely represented, and their percentage of the total flora (*i.e.* of the 4100 plants mentioned above) :—

	No.	Per cent.
Leguminosæ .....	346	8·4
Filices .....	318	7·8
Compositæ .....	281	6·9
Euphorbiaceæ .....	228	5·6
Orchidææ .....	170	4·1
Cyperaceæ .....	160	3·9
Rubiaceæ .....	147	3·6
Acanthaceæ .....	131	3·2
Gramineæ .....	130	3·2

The Palms and Asclepiads are as yet imperfectly known. Of the former only 18 are described, although the island undoubtedly possesses a large number. Many Asclepiadaceous plants have been collected, but the majority of them are still lying unnamed in various European herbaria.

Since Mr. Baker read his paper on "The Natural History of Madagascar" at the meeting of the British Association at York, in 1881, a goodly number of new genera of plants from the island have been described, so that the list he there gives needs many additions, so many in fact as to justify its revision. The number of endemic genera then known was about 80, it now reaches about 148.† The following is a list of the endemic genera with the number of species as at present known :—

\* This includes only the Filices, Equisetaceæ, Lycopodiaceæ, and Selaginellaceæ. The remaining Acotyledonous Orders are as yet very imperfectly known. Of Mosses about 250 have been described, and of Rhizophoræ 5.

† A few other endemic genera have been described since this paper was written and require to be added to the list given above. They are : *Santalina* (1) under Rubiaceæ, *Menabea* (1) in Asclepiadææ, *Peristea* (1) and *Camarotoea* (1) in Acanthaceæ, and *Leucosalpa* (1) in Scrophulariaceæ. It may also be added that since the publication of the above about 160 new plants (including 31 species of *Croton*) have been described from Madagascar, bringing the total number of species known in the island (excluding the mosses and some other of the lower cryptogams) up to 4260.

ISPERMACEÆ .... Rhabdometra (1), Spirospermum (1), Burasæia (4),  
                               Strychnopsis (1), Orthogynium (1), Gamopoda (1).  
 NEÆ ..... Tisonia (3), Prockiopsis (1).  
 FULACÆ ..... Talinella (1).  
 IFERÆ ..... Sphærosepalum (1), Leioclusia (1).  
 ENACÆÆ ..... Sarcolæna (4), Leptolæna (5), Xerochlamys (4),  
                               Bremolæna (1), Rhodolæna (4), Schizolæna (5),  
                               Sclerolæna (1).  
 CULIACÆÆ ..... Cheirolæna (1), Speirostyla (1).  
 ACEÆ ..... Ropalocarpus (4).  
 Æ ..... Rhodoclada (1).  
 PIGHIACÆÆ ..... Microsteira (1).  
 ANIACÆÆ..... Trimorphopetalum (1).  
 CINEÆ ..... Tridianisia (1), Petrusia (1).  
 ASTRINEÆ ..... Petelidium (1), Polycardia (5), Macrorhamnus (1).  
 NDACÆÆ ..... Macphersonia (4), Briandrostachys (1), Pseudop-  
                               teris (1), Tina (9).  
 CARDIACÆÆ ..... Micronychia (1).  
 UMINOSÆ ..... Chadsia (8), Baukea (1), Colvillea (1), Neobaronia  
                               (2), Xanthocercis (1), Aprevalia (1), Baudouinia  
                               (2), Brandzeia (1).  
 FRAGACÆÆ ..... Grevea (1).  
 AMELIDEÆ ..... Dicoryphe (14).  
 ZOPHOREÆ ..... Macarisia (2).  
 BETACÆÆ ..... Calopyxis (8).  
 ASTOMACÆÆ ..... Dichætanthera (7), Veprecella (4), Rousseauxia (1),  
                               Gravesia (3), Rhodosepala (1), Amphoracalyx (1),  
                               Phornothamnus (1).  
 IRACÆÆ ..... Rotantha (1).  
 YDACÆÆ ..... Calantica (2), Nisa (7), Asteropeiza (3), Franchetia  
                               (1).  
 NERACÆÆ ..... Hyalocalyx (1).  
 IFLOREÆ ..... Deidamia (5), Physena (2), Hounea (1).  
 URBITACÆÆ ..... Delognæa (1), Trochomeriopsis (1).  
 ELLIFERÆ ..... Phellolophium (1), Anisopoda (1).  
 LIACÆÆ ..... Cuphocarpus (2).  
 NACÆÆ ..... Melanophylla (2), Kaliphora (1).  
 IACÆÆ ..... Breonia (1), Carphalia (4), Paracephælis (1), Ta-  
                               matavia (1), Chapelieria (1), Nematostylis (1),  
                               Leiochilus (1), Saldinia (2), Schismatoclada (4),  
                               Holocarpa (1), Gomphocalyx (1), Payera (1), So-  
                               lenixora (1), Canephora (1).  
 POSITÆ..... Centauropsis (3), Rochonia (3), Glycideras (1), Hen-  
                               ricia (1), Synchodendron (2), Synccephalum (1),  
                               Sphacophyllum (1), Micractus (1), Epallage (6),  
                               Apodocephala (1), Astephanocarpa (1), Temo-  
                               lepis (1), Brachyachenium (1).  
 PANULACÆÆ ..... Dialypetalum (1).  
 RSINÆÆ ..... Oncostemon (20).  
 NACÆÆ ..... Tetraclis (1).  
 ACÆÆ ..... Noronhia (1).  
 CYNACÆÆ ..... Craspidospermum (1), Plectanea (1), Mascaren-  
                               haisia (12).  
 LEPIADEÆ ..... Harpanema (1), Pyncnoneurum (1), Decanema (1),  
                               Pervillæa (1), Vohemaria (1).  
 ANIACÆÆ ..... Hymenocnemis (1), Adenoplea (2).  
 TIANACÆÆ ..... Tachiadenus (6).

CONVOLVULACEÆ .....	Bonamia (1), Humbertia (1), Cardioclamys (1).
SCROPHULARIACEÆ ...	Hydrotiche (1), Rhaphispermum (1), Tetraspidium (1).
ACANTHACEÆ ... ..	Periblema (1), Brachystephanus (3), Lasiodadus (2), Forsythiopsis (1), Pseudocalyx (1), Monachochlamys (1).
VERBENACEÆ .....	Adelosa (1), Acharitea (1).
LABIATÆ .....	Tetradenia (1).
AMARANTACEÆ .....	Henonia (1).
PHYTOLACCACEÆ .....	Barbenia (1).
MONIMIACEÆ .....	Ehippiandra (1).
LAURINEÆ ....	Ravensara (6), Potameia (2), Bernieria (1).
PROTEACEÆ .....	Dilobeia (1).
BALANOPHOREÆ .....	Cephalophyton (1).
EUPHORBIACEÆ .....	Leptonema (1), Cometia (2), Tannodia (1), Sphaerostylis (1), Didierea (1).
URTICACEÆ .....	Pachytrophe (1), Ampalis (1).
ORCHIDEÆ .....	Bicornella (3).
LILIACEÆ .....	Rhodocodon (1).
PALMACEÆ .....	Dypsis (7), Bismarckia (1), Chrysalidocarpus (1).
CYPERACEÆ .....	Acriulus (1).
GRAMINEÆ .....	Pecilostachys (2).

A few words regarding some of these endemic genera may not be out of place. The *Chlænaceæ* are shrubs or trees, of which there are at present known 24 species comprised under 7 genera. The majority of the plants are found in Eastern Madagascar, all the *Rhodolæna* entirely so. The only species of *Sclerolæna* (*S. Richardi*) is found in the north and north-west, and the four species of *Xerochlamys* in the central, parts of the island. *X. pilosa* and *X. pubescens* are low wiry shrubs found on some of the hills and mountains of the interior, and are used by the natives in the manufacture of rum, but are said to cause vomiting of blood if used incautiously. They are known as "Hatsikana." Four of the species of *Leptolæna* occur in the large eastern forest, though *L. multiflora* is found also in the north-west part of the island, where *L. cuspidata* finds its home. *Leptolæna pauciflora* is a hard-wooded tree, from the trunk and branches of which, at a certain season of the year, there is a ceaseless dropping of water, sufficient indeed to keep the ground quite damp. This is caused by a number of hemipterous insects crowding together in a slimy liquid. May this afford an explanation of the similar well-known phenomenon exhibited by the Tamai-caspi, or Rain-tree, of the Eastern Peruvian Andes? The various species of *Rhodolæna*, which, with the exception of *R. altivola*, a semi-scandent shrub, are large trees, have handsome bright purple flowers about 2 inches in diameter; and *Sarcolæna grandiflora*, a tree found on the east, and probably also on the north-west, coast, possesses a white flower, also about 2 inches in diameter. *Cheiolæna linearis* "is a close ally of the nearly extinct blackwood and redwood of St. Helena." *Rhodoclada* is a doubtful member of the Order Linaceæ. *Trimorphopetalum* is an insignificant monotypic herb, nearly allied to *Impatiens*, inhabiting the streams in the forest on the eastern confines of Imerina. *Colvillus* is a plant possessing a long raceme of large handsome red flowers and somewhat sensitive leaflets. The two species of *Neobaronia*, noticed later on, are amongst the most remarkable trees in the

whole island. The *Dichatanthera* are forest trees, which are very beautiful when in full bloom. *Schismatoclada*, of which four species have been described, are shrubs or trees closely allied to *Cinchona*. The bark may possibly be worth analysis.\* *Pycnoneurum*, of which there is but one species, is an insignificant herb growing in the open country. The species of *Tachiadenus* are herbs with white or blue, crateriform, very long-tubed, corollas. *T. longiflorus* is said to possess purgative properties. *Dilobeia* is a large tree with leaves doubly bifid when young, and singly bifid when mature. It possesses diœcious inconspicuous flowers and a hard indehiscent oblong fruit about  $1\frac{1}{2}$  in. long.

I have long been convinced that the flora of Madagascar may be divided into three Regions, and the data given below will, I think, justify the conviction. These Regions run in a longitudinal direction, following approximately the longer axis of the island. I propose to call them Eastern, Central, and Western. The Central Region includes the elevated plateau of the interior, that is to say, the territory bounded on the east by the western edge of the great forest, on the west by the high land, from which there is generally a more or less distinct descent into the western lowlands, on the north by Lat.  $14^{\circ}$ , and on the south by the tropic of Capricorn. Its limits may be more definitely traced thus:—From the tropic of Capricorn and Long.  $46^{\circ} 50'$  the line runs about 15 miles east of Ihosy, thence to Ikalamavony, passes a few miles to the east of Ankavandra, turns north-east to Malatsy and Antongodrahoja, on to Isomboana, follows the range of mountains in the province of Befandriana, then up to a point halfway across the island in Lat.  $14^{\circ}$ ; coming south, it skirts the great forest until it reaches the mountain of Ambiniviny, it then takes a direction a little west of south until it again reaches the forest to the west of Ambatondrazaka (thus shutting out the great Antsihanaka province), which it skirts until it meets the tropic of Capricorn. By connecting the northern point with Port Lonky (or Loquez), and the southern point with the mouth of the River Andrahona, the divisions will be complete. All the territory to the west of the limits thus defined, with the island of Nosibe and all others near the mainland, constitute the Western Region, and that to the east the Eastern. Of course it is not pretended that these Regions can be defined with great accuracy, the divisions in the extreme north and south of the island between the Eastern and Western Regions, where they come in contact, being almost arbitrary. To what points north and south the Central Region should extend is also somewhat uncertain. The limits, however, of the three divisions as thus defined may be accepted as substantially correct. Inasmuch as these Regions range through about thirteen degrees of latitude (the Eastern and Western Regions being chiefly, and the Central entirely, within the tropics), there must necessarily be considerable variation in the character of the vegetation in a northerly and southerly direction, but the variation is gradual and by no means so marked or distinct as it is in an easterly and westerly direction.

A few general figures (particulars will be given further on) will show that this division into Eastern, Central, and Western Regions is fair and natural. Of the 3178 species of plants whose localities I have been able to determine, there are:—

\* It has since been examined, and is found *not* to possess any of the properties of *Cinchona*.

Common to the three Regions.....	100
"    "    Eastern and Central Regions .....	190
"    "    Western and Central     "    .....	74
"    "    Eastern and Western     "    .....	188
Peculiar to the Eastern Region .....	1108
Not peculiar to E. Region, but occurring in it .....	418
Total in the Eastern Region .....	1526
Peculiar to the Central Region .....	872
Not peculiar to C. Region, but occurring in it .....	364
Total in the Central Region .....	1236
Peculiar to the Western Region .....	706
Not peculiar to W. Region, but occurring in it.....	302
Total in the Western Region .....	1008

In regard to the *genera* whose distribution I have been able to determine, there are :—

Common to the three Regions.....	184
"    "    Eastern and Central Regions .....	131
"    "    Western and Central     "    .....	32
"    "    Eastern and Western     "    .....	119
Peculiar to the Eastern Region .....	153
Not peculiar to E. Region, but occurring in it .....	434
Total in the Eastern Region .....	587
Peculiar to the Central Region .....	130
Not peculiar to C. Region, but occurring in it .....	347
Total in the Central Region.....	477
Peculiar to the Western Region .....	115
Not peculiar to W. Region, but occurring in it.....	335
Total in the Western Region .....	450

There are, as shown by one of the preceding tables, 3178 species of plants whose distribution in the island I have been able to make o



remain to be determined about 1000. Some of these occur in the north of the island, both on its eastern and western sides, and belong to both the Eastern and Western Regions; but as the boundary line between the two in this part of the country is more or less arbitrary, I have not taken them into account. The names of the parts of the island where other plants have been found are sometimes given as localities, but, owing to inaccuracy in spelling on the part of the collectors, or blunders in copying, I have been frequently unable to locate them; for instance, "Anànsinàhina bozaba." What part of the island is indicated by such a blundering combination of letters it is impossible to say. "Ankaratra mountains" is also given in one publication. Possibly this is the Ankaratra mountains! These localities, when quite unrecognized, I have also omitted.

Though the figures in the above and the following tables will require alteration when we become acquainted with the details of the remaining plants, and though some of those which are now only known to occur in one of the three Regions probably in the future be found in one or both of the others, the order of the plants peculiar to the respective Regions will not, I am confident, be seriously disturbed, or the floras be shown to be even nearly identical.

As regards the Orders, there are several which appear to be absolutely local, and more which are nearly confined, to one or other of the Regions, but these will be noticed further on.

The table on the next page shows the Orders most largely represented, and the percentage of the total flora, in the respective Regions. In the following facts are prominent:—In the Eastern Region the most abundantly represented Orders are Filices and Compositæ; the former are more than double the latter in the number of species, respectively 13·1 and 6 per cent. of the flora of this Region. It is noticed that Filices do not appear in the second or third column of the table, the reason being that I have not sufficient data for determining their relative positions. Possibly they might occupy the third or fourth column. In the Western Region the Leguminosæ stand at the head of the list, and these are followed by Euphorbiacæ; but the difference between the two is very great, the proportion being about 5 to 2. The former forms less than 18·8 per cent. of the flora of the Western Region of Leguminosæ. The Compositæ appear to be poorly represented, forming only 3·2 per cent. of the flora. In the Central Region, on the other hand, the Compositæ are at the head of the list, with a percentage of 13. Rubiacæ, again, which one might expect to be more abundantly represented in the Western Region, only form 3·2 per cent. of the flora. The Eastern, Central, and Western Regions therefore might be divided into the most largely represented Orders into account, be fairly divided into the Fern Region, the Composite Region, and the Leguminous Region respectively.

As regards the table showing the distribution of the species, we see that the majority are common to the Eastern and Central Regions, and 74 to the Eastern and Central. But the majority of these may be reckoned as species which do not far exceed the boundaries of one or other of the Regions to which they more properly belong.

EASTERN REGION.			CENTRAL REGION.			WESTERN REGION.		
	No. of species.	Per cent.		No. of species.	Per cent.		No. of species.	Per cent.
Filices .....	200	13.1	Compositæ.....	160	13.0	Leguminosæ.....	190	18.8
Compositæ .....	91	6.0	Leguminosæ .....	104	8.4	Euphorbiaceæ .....	78	7.7
Leguminosæ .....	80	5.2	Cyperaceæ.....	82	6.7	Tiliaceæ.....	36	3.6
Rubiaceæ .....	74	4.9	Orchideæ .....	70	5.7	Compositæ.....	32	3.2
Orchideæ .....	73	4.8	Gramineæ .....	45	3.6	Rubiaceæ .....	32	3.2
Euphorbiaceæ .....	57	3.7	Labiatae .....	40	3.2	Sterculiaceæ .....	31	3.1
Acanthaceæ .....	50	3.3	Euphorbiaceæ .....	37	3.0	Acanthaceæ .....	29	2.9
Gramineæ .....	39	2.6	Acanthaceæ .....	36	2.9	Malvaceæ .....	29	2.9
Urticaceæ .....	38	2.5	Rubiaceæ .....	36	2.9	Convolvulaceæ .....	28	2.8
Myrsinæ .....	33	2.2	Crassulaceæ .....	30	2.4	Cyperaceæ.....	27	2.7
Cyperaceæ.....	31	2.1	Geraniaceæ .....	25	2.0	Gramineæ .....	26	2.6
Tiliaceæ .....	27	1.8	Malvaceæ .....	17	1.4	Anonaceæ .....	14	1.4
Total of the above.. 793			682			552		
Total in the Region..... } ..... 1626			1236			1008		

There are only 100 plants common to the three Regions. A list of these may be here given:—(a) ENDEMIC: *Gomphia deltoidea*, *Piptadenia rosostachys*, *Dichrostachys tenuifolia*, *Mimosa latispinosa*, *Combretum incanum*, *Calantica cerasifolia*, *Vernonia grandis*, *Pterocaulon Bojeri*, *Emilia ina*, *Ficus megapoda*, *Lagarosiphon madagascariensis*, *Cynorchis flexuosa*, *Scorea heteropoda*, *Raphia Ruffia*, *Arundo madagascariensis*. (b) MASSENE: *Aphloia theaeformis*, *Gouania tiliaefolia*, *Tristemma virusanum*, *Illanthus casticum*. (c) CHIEFLY TROPICAL AND WIDELY SPREAD: *Sampelos Pereira*, *Nymphæa stellata*, *Polycarpæa corymbosa*, *Portulaca acea*, *Haronga madagascariensis*, *Sida rhombifolia*, *Urena lobata*, *Melochia horifolia*, *Waltheria americana*, *Triumfetta rhomboidea*, *Desmostachys nchomanus*, *Cardiospermum Halicacabum*, *Paullinia pinnata*, *Crotalaria sa*, *C. striata*, *Indigofera hirsuta*, *Sesbania punctata*, *Æschynomene litiva*, *Desmodium paleaceum*, *D. salicifolium*, *D. mauritianum*, *Abrus atorius*, *Dolichos axillaris*, *Eriosema cajanoides*, *Cassia occidentalis*, *C. rosoides*, *C. Tora*, *Mimosa asperata*, *Albizia fastigiata*, *Ammannia galensis*, *Woodfordia floribunda*, *Jussiaea repens*, *J. erecta*, *Ludwigia æoides*, *Melothria tridactyla*, *Ageratum conyzoides*, *Psidium dodonæifolia*, *Mea lacera*, *Gnaphalium luteo-album*, *Eclipta erecta*, *Gynura cernua*, *ca rosea*, *Gomphocarpus fruticosus*, *Buddleia madagascariensis*, *Limnanthum indicum*, *Heliotropium indicum*, *Ipomœa palmata*, *I. medium*, *I. antha*, *I. sessiliflora*, *Solanum nigrum*, *Scoparia dulcis*, *Buchnera rstachya*, *Asystasia gangetica*, *Ocimum canum*, *O. suave*, *Hyptis pectinata*, *spicigera*, *Amarantus spinosus*, *Achyranthes aspera*, *Celosia trigyna*, *gonum serrulatum*, *Euphorbia pilulifera*, *E. indica*, *E. thymifolia*, *Illanthus nummularifolius*, *Dalechampia ternata*, *Sponia affinis*, *Obetia òlia*, *Bœhmeria platyphylla*, *Smilax Kraussiana*, *Floscopa glomerata*, *erata arundinacea*, *Heteropogon contortus*, *Andropogon hirtus*, *Sporobolus cus*, *Phragmites communis*, *Gleichenia dichotoma*, *Lycopodium cernuum*, *lla pinnata*, *Marsilea diffusa*.

It will thus be seen that the great bulk of the plants common to the three Regions are widely-spread tropical species. Of plants that reach it over the island from the east coast to the west coast there are but few. Of these may be mentioned *Haronga madagascariensis*, *Abrus atorius*, *Dolichos axillaris*, and *Raphia Ruffia*. Perhaps the commonest and most widely spread species (excepting some of the grasses, &c.) in the whole island is a fern, *Gleichenia dichotoma*.

The following is a list, though probably not complete, of the plants which I find to be common to the Eastern and Western Regions:—*Wagesia erecta*, *Burasaia madagascariensis*, *Ionidium buxifolium*, *Alsodeia folia*, *Flacourtia Ramontchi*, *Sarcolœna grandiflora* (?), *Leptolœna triflora*, *Schizolœna elongata*, *Sida cordifolia*, *S. urens*, *Hibiscus vitifolius*, *surattensis*, *H. tiliaceus*, *Thespesia populnea*, *Heritiera littoralis*, *Dombeaya sipes*, *D. parviflora*, *Cheirilœna linearis*, *Grewia viscosa*, *Corchorus viridis*, *Erythroxylon pyrifolium*, *Murraya exotica*, *Gomphia dependens*, *obtusifolia*, *Chailletia Dichapetalum*, *Ilex madagascariensis*, *Colubrina indica*, *Gouania aphrodes*, *Leea guineensis*, *Schmidelia racemosa*, *Cossignia lagascariensis*, *Macphersonia madagascariensis*, *Gluta Turtur*, *Agelœa narckii*, *A. Koneri*, *Æschynomene micrantha*, *Æ. patula*, *Desmodium bellatum*, *D. triflorum*, *D. lasiocarpum*, *D. incanum*, *Clitoria lasciva*, *amnis labialis*, *Mucuna pruriens*, *Dioclea reflexa*, *Canavalia obtusifolia*,

*Psophocarpus longepedunculatus*, *Pterocarpus advenus*, *Derris aligina*, *Sophora tomentosa*, *Casalpinia Bonducella*, *Cobillea racemosa*, *Panicum regia*, *Cassia Petersiana*, *Bauhinia Hildebrandtii*, *Azalea bijuga*, *Andropogon verrucosus* (?), *Cynometra madagascariensis*, *Entada scandens*, *Piptadenia Peruviei*, *Albizia Lebbek*, *Hirtella Thouarsiana*, *Brexia madagascariensis*, *Weinmannia madagascariensis*, *Rhizophora mucronata*, *Bruguiera*, *Rhertii*, *Byopphyllum calycinum*, *Terminalia Catappa*, *Calopixis malabarica*, *Pimphis acidula*, *Jussiaea villosa*, *Casearia nigrescens*, *Asteropeia multiflora*, *Modecca pellata*, *Physena madagascariensis*, *Pentas mussandoides*, *Mussaenda parvifolia*, *Guettarda speciosa*, *Canthium pallens*, *Sphæranthus sphenocladus*, *Ambrosia maritima*, *Diospyros gracilipes*, *D. haplostylis*, *Tetracis clusii*, *Alyxia erythrocarpa*, *Orchidea Thouarsii*, *Alafia Thouarsii*, *Mascarenella longilobiflora*, *Strychnos spinosa*, *Ipomoea Pes-caprae*, *Striga hirsuta*, *Bruchia stephanus Lyallii*, *Justicia haplostachya*, *J. tenella*, *Lippia nodiflora*, *Stachys lurphela indica*, *Premna integrifolia*, *Ocimum gratissimum*, *Lemna nepetefolia*, *Piper subpeltatum*, *P. borbonense*, *Tambourissa religiosa*, *Euphorbia pyrifolia*, *E. Boivini*, *E. adenopoda*, *E. tetraptera*, *Acalypha urophylla*, *Mucaranga cuspidata*, *Tragia furialis*, *Dalechampia tamifolia*, *Uncaria acuminata*, *Casuarina equisetifolia*, *Crinum Hildebrandtii*, *Ammannia Daniellii*, *Ravenala madagascariensis*, *Flagellaria indica*, *Typhonodorum Lindleyanum*, *Cyperus distans*, *C. dubius*, *Fuirena capitata*, *Olyra latifolia*, *Coix Lachryma*, *Eleusine indica*, *E. aegyptiaca*, *Eragrostis ciliaris*, *Chapelieri*, *Nastus capitatus*, *Asplenium bipartitum*.

That the flora of the Central Region should differ widely from the floras of the Eastern and Western Regions is accounted for by the great elevation above the sea of the central part of the island. But how are we to explain the existence of so great a difference between the floras of the Eastern and Western Regions, occupying, as they do, the same large latitudinal and altitudinal positions, for of the 2206 plants found in the Eastern and Western Regions only 128 (not reckoning the 100 occurring in all the three Regions) are common to both? I believe the explanation to be simple. The central elevated plateau of the island, which runs from north to south, is undoubtedly of very great antiquity, having existed not improbably from Palæozoic times, and has therefore always formed a barrier between the floras of the Eastern and Western Regions. The floras therefore, even if they were formerly similar, which is doubtful, have had abundance of time to become differentiated in character; and if they were originally different, they have been kept, by the existence of the mountain barrier, distinct to the present day.

The flowering season in Madagascar, generally speaking, is from October to January, but November and December are the months in which more especially the great majority of plants are in bloom. In no part of the year, however, does the climate become sufficiently winterly to cause more than a comparative cessation in the flowering of plants, and very few of the trees and shrubs shed their leaves even in the coldest season. Very many species are in flower for six or eight months, and a goodly number all the year round. Of the latter may be mentioned *Scaevola erythracanthum*, *S. auriculatum*, *Gonimium sinense*, *Cassia occidentalis*, *Ruons roseifolius*, *Tristemma crissanthum*, *Emilia cirina*, *Lobelia serpens*, *Soparia dulcis*, *Achyranthes aspera*, and *Euphorbia splendens*.

ere are comparatively few plants having beautiful flowers in Madagascar. There are no meadows anywhere in the island that can at all be with our English meadows for floral beauty. Neither do the supply what is lacking in the meadows. Any one entering a gassy forest with the anticipation of seeing innumerable beautiful flowers would be utterly disappointed, for they are extremely rare. There are indeed pretty flowers in the woods and in the fields, but they are to be looked for; they are so few and far between that they very rarely produce any marked effect in the landscape. Of the plants having beautiful flowers, the first place must be given to the Orchids. *Acum sesquipedale*, *A. Ellisii*, *A. superbum*, and some other species of *ngrecum* have long occupied a high position in orchid culture. In the interior of the island there are two or three striking ground orchids. One of these, *Cynorchis flexuosa*, has a flower with a pretty white labellum; another, *Disa incarnata*, which grows in marshes in Eastern Imerina, has a very handsome compact spike of brilliant scarlet flowers; and a third, *Disa Buchenaviana*, found on the hillsides of Eastern Imerina near the forest, has a spike of most beautiful blue flowers. In the Ankapay plain I have occasionally seen the pretty yellow-red *Thunbergia alata*. In the open country in the central parts of the island *Vinca rosea*, with its pretty rose-coloured corolla, is common, also *Commelina madagascariensis*, with its delicate petals of a very blue colour. *Euphorbia splendens*, an inhabitant of a few of the rocky hills, and extensively used for hedges in Imerina, has a flower with scarlet or yellow bracts. *Clematis Bojeri* (with its varieties *gophylla* and *C. trifida*), the only erect *Clematis* in Madagascar, *Tachadenus longiflora*, belonging to the Gentian Order, and having a white corolla with a tube about four inches long, occur frequently on the hillsides of the interior of the country. *Tachadenus platypterus*, in East Betsileo, is similar to the last mentioned, but has a blue corolla. A small tree, which occurs sparingly on the western slopes of Ankaratra, *Dombeya longicuspidis*, has a pretty red flower. *Aristea ingii*, a marsh plant, and *A. angustifolia* possess very pretty blue flowers. *Harpagophytum Grandidieri*, a shrub belonging to the Order Rubiales, and found to the north-west of Mandritsara, has bunches of small red flowers proceeding from a tuft of leaves at the ends of the branches. Among other plants found in Central Madagascar which are noteworthy for their floral beauty may be mentioned *Sparmannia africana*; four species of *Salvia*, found in the higher parts of Vakinankaratra; *Tristellateia madagascariensis*, a climbing plant with spikes of yellow flowers; *Vitis microdiptera*, *Agave salicifolia*, three species of *Chypodium*, and two or three species of *Sopubia*. *Stenocline inuloides*, a small shrub with pretty flowers, and is strongly scented, though not in the island probably possesses so strong or sweet a scent as *line incana*, one of the shrubs known by the natives as "Rambia-".

The prettiest flowers found in the eastern forests belong probably to the species of *Rhodolæna*, *Dichæanthæra*, *Impatiens* (especially *I. odorata*), and various Acanthaceous plants. On the east there are the *odorata*, *Stephanotis floribunda*, *Poinciana regia*, *Astrapæa Wallichii*, *Arcolea grandiflora*. *Hemistemma Aubertii* is a shrub with large yellow flowers, which is found from Eastern Imerina to the east

coast. In Alaotra Lake the well-known *Lotus* of the Nile occurs. In the western part of the island there exist several species of *Ipomoea* with variously coloured flowers; also *Gloriosa virescens*, *Kigelia madagascariensis*, a shrub or small tree with large red trumpet-shaped flowers, and *Combretum coccineum*, a shrub covered in the season with abundant brilliant scarlet flowers. Scattered about the country in various places there are several species of *Crinum*; and *Buddleia madagascariensis*, a beautiful shrub with panicles of golden yellow odoriferous flowers, is common almost everywhere. This list might of course be considerably enlarged.

A few particulars may now be given with regard to the character of the three botanical Regions.

#### THE EASTERN REGION.

The Eastern Region occupies the narrow strip of country lying between the Indian Ocean and the great mountain-range which runs along the whole extent of Madagascar, and forms the chief watershed of the island. This strip of territory averages probably 60 or 70 miles in width and is over 800 miles long from north to south. It consists, for the most part, of a littoral belt, behind which is a tract of hilly country succeeded by several mountain-ranges. The littoral belt is not more than a few feet above the sea-level, and has doubtless been formed, not by elevation of the land, but by the silting up of sand by the sea, aided by the wind. It varies much in width, but, I believe, never exceeds more than eight or ten miles. It consists of numerous very slightly elevated grass-covered sand dunes parallel with the sea-coast, with numerous lagoons and swamps occupying the hollows. The tract of country to the west of the littoral belt ranges from 100 to about 2500 feet above the sea, and consists of innumerable rounded hills thrown together in wild confusion, reminding one, as has been frequently remarked, of a suddenly congealed stormy sea. To the west of this tract again there rise two or three mountain-ranges running, with more or less continuity, almost the whole length of Madagascar, the highest and the most westerly of which rises about 4500 feet above the sea. And as there are three stages in the physical features of the country from the sea to the highest range of mountains, so there are, more or less corresponding with them, three botanical zones; for although there is no distinct break in the flora, it varies considerably according to elevation. Moreover, in a Region ranging through 12 degrees of latitude, it is not surprising if we find considerable variety in the character of its vegetation, according as we approach or recede from the equator. Notwithstanding this, however, the Region is substantially one.

The soil, with the exception of the sandy littoral belt and alluvial deposits in the great Ankay and Antsihanaka plains and along the courses of the rivers, consists almost wholly of decomposed rocks of the crystalline schist series, especially gneiss. Granite and basaltic rocks here and there also make their appearance.\*

The region is traversed by numerous short rivers which rise in the

\* For further particulars of the Geology of the island see my paper, "Notes on the Geology of Madagascar," in the *Quarterly Journal of the Geological Society*, Vol. xlv. Part 2, No. 178.

l-ranges to the west. Many of these rivers, in their attempt to charge themselves into the sea, form lagoons. These lagoons, which constitute so prominent a feature in the character of the east coast, exist most continuously for a distance of about 300 miles.

There is a copious supply of rain on the eastern side of Madagascar. This is due to the south-east trade-winds, which, coming from the Indian Ocean, precipitate the greater part of the moisture with which they are laden on the forest-clad slopes before reaching the higher plateau of the land. The only statistics we have in regard to the rainfall of the Eastern Region are those given by Mr. Shaw for the year 1882. He says that at Tamatave the amount of rainfall for that year was 94.94 inches. There can be no doubt, however, that the Region generally possesses a much higher rainfall than any other part of the island, the probability being that the average annual fall reaches from 90 to 100 inches, or even more.

The temperature of the Region of course varies considerably according to elevation and latitude; but statistics are altogether too scanty to be of much service. Mr. Shaw tells us that at Tamatave "the greatest amount of heat registered by the insulated solar radiation thermometer was on the 22nd December, when it stood at 163°. The highest temperature in the shade in a good circulation of air was 93°, which it attained on 24th December and 15th and 25th January. The lowest temperature during the night was 58° on 28th June and 9th and 10th July."

Of the three botanical Regions into which I have divided the island, the Eastern is by far the most abundantly clothed with vegetation, though probably the number of species of plants which it contains does not greatly exceed that of the Central or Western Regions. Probably no less than two-fifths of its area is covered with dense impenetrable continuous forest. The greater part of the country not thus covered is to a large extent occupied by innumerable patches of wood, once probably forming part of the great forest; and even where there are no such patches, vegetation is profuse.

As will be seen from the table on page 332, the Ferns occupy the most prominent position in the flora of the Eastern Region, their proportion being as much as 13.1 per cent. With this exception, there is no Natural order unduly represented. Compositæ and Leguminosæ come next to the Ferns; but these constitute only 6 and 5.2 per cent. respectively of the flora. Neither is there any genus of plants unduly predominant. The flora, as is the case also with the other Regions, is not characterized by any special or predominant forms of vegetable life. The Guttiferæ, Rutaceæ, Melastomaceæ, Araliaceæ, Myrsinæ, Loganiaceæ, Monimiaceæ, Laurinæ, Balanophoræ (2 spp.), and Loranthaceæ, are almost confined to this Region; the Cactææ (2 spp.), Goodenoviæ (2 spp.), Epenthaceæ (1 sp.), Coniferæ (1 sp.), Proteaceæ (2 spp.), and Cycaceæ (1 sp.) entirely so. The genera most abundantly represented are:—*Asplenium* (33 species), *Vernonia* (32), *Polypodium* (25), *Dombeya* (9), *Nephrodium* (17), *Ficus* (17), *Angræcum* (16), *Hypoestes* (16), *Zinnia* (15), *Acrostichum* (15), *Cyperus* (14), *Viscum* (13); then come *Libiscus*, *Grewia*, *Oncostemum*, *Diospyros*, *Cyathea*, and *Davallia*, with species each; *Elæocarpus*, *Weinmannia*, *Ardisia*, *Clerodendron*, and *Oranthis*, with 11 each; *Medinilla*, *Liparis*, and *Lycopodium*, with

10 each; *Desmodium*, *Eugenia*, *Panax*, and *Ipomœa*, with 9 each of *Erythroxylon*, *Gærtnera*, *Solanum*, *Vitex*, *Macaranga*, *Pandanus*, *Bala-*  
*phyllum*, *Pteris*, and *Lomaria*, with 8 each; *Symphonia*, *Impatiens*, *Emmenan-*  
*thellium*, *Helichrysum*, *Peperomia*, *Tambourissa*, *Croton*, *Panicum*, *Pilea*, *Polystachya*, *Selaginella*, 7 each; *Garcinia*, *Toddalia*, *Gomphia*, *Crotalaria*, *Euphorbia*, *Me-*  
*menne*, *Oldenlandia*, *Psychotria*, *Senecio*, *Justicia*, *Plectranthus*, *Dyckia*, *Polystachya*, *Mystacidium*, and *Trichomanes*, 6 each; *Sida*, *Elæodendron*, *Cassia*, *Embelia*, *Polygonum*, *Piper*, *Habenaria*, *Cynorchis*, *Hymenophyllum*, *Pellaea*, 5 each.

The narrow littoral belt contains perhaps the most attractive scenery in the whole island, its soft green sward and numerous clumps of trees and shrubs giving quite a park-like aspect to the country. It might almost be said to constitute a botanical subregion in itself, so many are the forms of vegetable life found here which do not occur elsewhere in the island. Not only so, but even the very coast-line possesses numerous trees and shrubs peculiar to itself; and any one coming from the interior of the country must be struck with the great and sudden change in the flora when he gets within about a hundred yards of the sea. Here is to be found the tall fir-like *Casuarina equisetifolia*, the beef-wood tree; the beautiful-leaved *Calophyllum Inophyllum*, which yields the oil known in India as Pinnay oil; the *Sarcolena grandiflora*, one of the finest of the Chlænads; *Azelia bijuga*, known to the natives as "Hintsina," and affording a useful wood; *Trachylobium verrucosum*, which supplies the Gum Copal exported from the island (the east coast of Madagascar probably being its original home, from whence it has since spread to Africa and other places); *Brexia madagascariensis*; *Terminalia Catappa*, the Indian almond, with its large leaves reddening in their decay on the remarkably horizontal branches; *Terminalia Fatra*, like *Barringtonia speciosa* and *B. apiculata*; *Fœtidia obliqua*; *Ixora odorata*, with its beautiful clusters of delicate white fragrant flowers; *Scaevola Kœnigii* and *S. Plumieri*; *Tanghinia venenifera*, the celebrated Tangea shrub, the juice of whose apple-like fruit or nut was formerly, and doubtless in some places still is, used in the Tangea ordeal as a means of testing the innocence or guilt of accused persons; *Casalpinia Bonducella*; *Stephanotis floribunda*, with its well-known lovely large white flowers; the beautiful endemic fern-palm, *Cycas Thouarsii*, from which I believe the natives obtain a kind of false sago. Among herbs may be mentioned *Vinca trichophylla*, *Tachadenus carinatus*, and *Ipomœa Pes-capræ*, which straggles far and wide on the sand of the sea-shore. There are also a few as yet undescribed palms. The coconut palm frequently occurs near villages, where it has been planted, but it is not a native of the island.

Not confined to the sea-coast, but found within the littoral belt, the most prominent vegetable forms are the following:—Several species of *Pandanus*, more especially *P. concretus*, an exceedingly common screw-pine. Another species of screw-pine, probably unknown to science, exists abundantly in the swamps. Its leaves, which are about 4 feet long by 6 or 8 inches wide, are employed, to the exclusion of almost everything else, for wrapping round packages carried from the coast into the interior of the country, and prove effectual in protecting from the rain. They are also extensively used (as are probably also



of *P. concretus*) by the Betsimisaraka and other tribes for the walls of the thatch of their huts. The widely spread *Hibiscus tiliaceus*, which yields so valuable a fibre, is also common here. *Princiana regia* is said to occur in this part of the island. Mr. Ellis describes it as "rising sometimes to the height of 40 or 50 feet, and between the months of December and April presents, amidst its delicate pea-green serrated leaves, one vast pyramid of bunches of bright dazzling scarlet flowers." The *Astrapæa Wallichii*, a shrub or small tree growing along the sides of streams, is also striking for its beautiful bunches of flowers. Joseph Paxton and Dr. Lindley say that it is "one of the finest ever introduced; and when loaded with its magnificent flowers, think nothing can exceed its grandeur." The *Brehmia spinosa* also inhabits this part of the island, its large, orange-like, hard-shelled fruit possessing a flavour by no means disagreeable. Along the sides of the mountains and marshes in scattered places may be found the curious pitcher-plant, *Nepenthes madagascariensis*. It is a shrub about 4 feet high, whose jug-shaped pitchers, 4 or 5 inches in length, contain stagnant water and numerous insects. *Ouvirandra fenestralis*, the beautiful lace-leaf plant, one of the most curious and remarkable of vegetable phenomena, abounds in the rivers of this part of the country. It is, however, by no means confined to this littoral belt; it exists throughout the Eastern Region, and is found, though not so commonly or so abundantly, in the streams of the high plateau of the island which comprises the Central Region. In the marshes are to be found, among numerous other plants, the widely spread *Typha angustifolia*, which is known as "Vondrona." This also occurs in the central parts of the island, where in some places, notably Antsirabe, it is cultivated for the production of the potash which it yields. Another plant common in the Eastern Region is *Lepironia mucronata*, known by the natives as "Penja." It is a sedge belonging to the Order Cyperaceæ, and is used largely by native women in the manufacture of sugar-bags which are exported to Mauritius. Straw hats are also made of it. In the north-east of Madagascar, probably not far from the sea, is to be found a liana belonging to Leguminosæ, which has the longest, though not the finest, stem of all the known members of this extensive Order of plants. The length of the flower, which is probably yellowish, is 30 to 32 centimetres. The plant belongs to the genus *Bauhinia*, and has been named by M. Baillon *B. Humblotiana*. In the western part of this littoral belt are to be seen here and there woods composed of a tree known as "Sanga" (lit. a bunch of hair on the front part of the head), the fact of its bearing the branches near the summit. What the tree is I do not know, but not improbably it is a species of *Weinmannia*. Several beautiful Orchids are found on the east coast, of which, however, only, remarkable for their abundance and beauty, need here be mentioned, *Angræcum superbum* and *A. sesquipedale*. The former, with its long spike of large and numerous flowers, which are in blossom in June and July, is extremely abundant and beautiful. Whatever else may escape the notice of the traveller, this magnificent Orchid, seated among the numbers on many of the shrubs and trees, forms far too striking an ornament to be passed by unheeded. The *A. sesquipedale*, remarkable for the length of its spur, is not so common as *A. superbum*;

nevertheless it is comparatively abundant, generally choosing, I believe, as its habitat, trees which overhang the rivers or lagoons. It is, however, also found in the interior of the island.

To the west of the littoral belt comes that portion of the Eastern Region which I have spoken of as hilly country, consisting, as it does, of innumerable rounded hills. It reaches from about 100 to 2500 feet above the sea. In this second zone the flora begins to assume a different aspect from that of the littoral belt. I can only here notice a few of the vegetable forms which, from their prominence or peculiarities, impress their mark upon the landscape. There is, first of all, the remarkably elegant bamboo, the *Nastus capitatus*, which, in many places, completely covers the hillsides and gives quite a character to the scenery. It waves its bent head gently and gracefully with every breeze of air, and, with its bright green constantly nodding plumes, affords one of the most striking and beautiful vegetable phenomena in the whole island. This, or a similar species, also occurs, though by no means so abundantly, in the north-west part of Madagascar. Other hillsides in this second zone are almost exclusively occupied by *Psiadia dodonæifolia*, known to the natives as "Dingandingana," a composite shrub. In the months of September, October, and November this shrub is covered with orange-yellow flowers, producing, from their abundance, a bright cheerful effect in the landscape. It is also found in the Central and Western Regions, but is much less frequent than in the Eastern. *Rosa rosæfolius* is a shrub also found plentifully in this part of the island. It is common about villages and in some of the valleys, and extends westwards as far as the Central Region, where, however, it occurs sparingly. It seems to be in flower and fruit throughout the year, its large red fruit, though somewhat deficient in flavour, being by no means unacceptable. The plant is found also at the Cape, and is common in Tropical Asia. In the more open places the shrub *Lam. speciosa* is to be met with. Among epiphytic plants apparently confined to this intermediate zone may be mentioned two species of the American genus *Rhipsalis*:—*R. horrida*, endemic in Madagascar, and the widely spread *R. Cassytha*, occurring in the Mascarene Isles generally, in Tropical Africa, Ceylon, and Tropical America. The curious *Pothos Chapelieri*, a plant only found in Madagascar, may also commonly be seen here, with its paddle-shaped leaves, climbing to great heights up the tree-trunks. It is, I believe, limited in its range to the woods on the lower slopes of the eastern side of the island. Another member of Aroidæ is the *Typhonodorum Lindleyanum*, a gigantic Arum endemic in Madagascar, and growing on river-sides and in marshes to the height sometimes of 12 or 15 feet, and possessing a large white spathe of more than a foot in length. It is also common in the western parts of the island. The natives occasionally use the fruit as an article of food. Among the plants which are abundant in individuals in this intermediate zone may be mentioned *Urena lobata*, *Haronga madagascariensis*, *Mussaenda arcuata*, *Scoparia dulcis*, *Sabicea diversifolia*, *Emilia amplexicaulis*, *Elephantopus scaber*, the last of which, in some parts of the Tanala country, grows so abundantly as seriously to impede travelling, various species of *Sida*, *Clitoria lasciva*, with its large, beautiful, shell-like, blue flowers, and *Piper subpellatum*, both of

ch are also found in Western Madagascar, and *Orchipeda Thouarsii*, known to the natives as "Kaboka" or "Kangarano," a small tree with abundant milky juice, and a fruit (often two together) about the size of an apple. The tree grows in almost all the warm valleys from the coast in elevation of about 3000 feet above the sea, as also in the valleys of the western part of the island. But perhaps among the plants most abundant in individuals, *Amomum Daniellii*, the Malagasy Cardamom, occupies the most prominent place. It commences on the littoral belt, reaches its maximum development at an elevation of from 2000-3000 feet above the sea, in some places almost covering the whole country. It is also one of the plants common to the Eastern and Western regions. Finally, the famous "traveller's tree," *Ravenala madagascariensis*, finds its most congenial home in this intermediate belt, though it occurs also in the north-west of the island. The tree ranges from the sea-coast to the height of about 1500 feet, after which it begins rapidly to disappear. At an elevation of about 1000 feet it is extremely abundant, much more abundant in fact than any other tree, and with its twenty or thirty large leaves arranged on the summit of the stem like a gigantic fan, is the one striking and peculiar feature in the vegetation. It is not found so much in the forests as on the hillsides in open country. Its uses, like its native names, are various. The stem yields an edible substance, probably a sweet liquid. The leaf-sheaths contain a supply of pure cool water, from which peculiarity indeed the tree derives its name of "traveller's tree," though, as a matter of fact, it generally grows where fresh cold water is obtainable in abundance. The blade of the leaf, very similar to that of the banana, is largely used by the natives in building their frail huts, and, while still green, as substitutes for spoons, plates, and tables. The tree is known to the Betsimisaraka as "Ravinala," "Ravimpotsy," and "Fontsy." Among other tribes it is called "Bemavo," "Bakabia," and "Akondrozo." In the whole of Madagascar, where it is endemic, there is no more remarkable vegetable form than the "traveller's tree," and certainly none which affects so much the aspect of the vegetation. The Rofia palm (*Raphia Ruffia*) is also abundant in many of the plains.

Proceeding westward we reach the third and last stage in the Eastern region. It consists chiefly, as I have said, of long, more or less continuous, mountain-ranges, which are, for the most part, covered with dense impenetrable forest. Although we still meet with many vegetable forms found on the two lower platforms, there is a considerable change in the character of the vegetation, innumerable trees, shrubs, and herbs here gradually making an appearance which are not found on the lower slopes. The forest, as before remarked, probably occupies two-thirds of the entire Eastern Region, and is remarkable for its great variety of plant forms, there being no single species, genus, or Order of plants dominant over the rest, or which influences to any great degree the general physiognomy of the vegetation.

A few of the vegetable denizens of this upper zone may be here mentioned. The Guttiferæ are represented by about half a dozen species of *Symphonia* and *Garcinia*, some of which yield a kind of lard used by the natives for various purposes. Of Sterculiaceæ

there are several species of *Dombeya*; and of Tiliaceæ several species of *Grewia*. Belonging to Geraniaceæ there occur some six or eight species of *Impatiens*, one of which, *I. Lyallii*, possesses sufficiently attractive flowers to render it "very suitable to introduce for horticultural purposes." Myrtaceæ has 9 species of *Eugenia*. The Melastomaceæ are chiefly confined to this upper belt and consist of the genera *Dionychia*, *Tristemma*, *Dichaetanthera*, *Phoranthamnus*, *Veprecella*, *Gravillea*, and *Medinilla*. A few of the members of this Order are handsome shrubs or trees, among which may be specially mentioned *Dichaetanthera arborea* and *D. oblongifolia*. The Order Araliaceæ is also almost entirely confined to this forest area, and consists, for the most part, of species of *Panax* and *Cussonia*. As for Rubiaceæ the genera most largely represented are *Danais* (15 spp.) and *Schinus toclada* (4 spp.), a genus closely allied to *Cinchona*. The Myrsinaceæ also find their headquarters in this higher belt, being represented by a goodly number of *Ardisia* and *Oncostemum*. Here, too, is the special home of the plants belonging to Loganiaceæ, comprising several species of *Gartnera*, *Nuxia*, and *Anthocleista*. One species of *Anthocleista*, *A. rhizophoroides*, is remarkable for its very large cabbage-like leaves. Its Malagasy name is "Landemy," and it supplies a native remedy for malarial fever, though whether or not it is an effectual one I cannot say. Acanthaceæ are well represented by species of *Justicia* and *Hypoestes*, and some of the prettiest flowers to be found in the forests belong to plants of this family. *Strobilanthes madagascariensis*, though not remarkable for its beauty, is very common in the deepest parts of the forests. The natives know it as "Belohalika." Of Piperaceæ there are several species of *Piper* and *Peperomia*, *Piper borbonense* and *P. pachyphyllum* affording the natives a kind of Cubebs pepper. The Loranthaceæ inhabit these upper forests almost exclusively. There are about a dozen species each of *Loranthus* and *Viscum*. Of Euphorbiaceæ there are a goodly number of *Euphorbia* and *Macaranga*. Of Urticaceæ there are a dozen or more species of *Ficus* and several of *Pilea*. Of Scitamineæ there are among others the well-known *Maranta arundinacea*. It is found in the forests, but I am not aware that the natives know it as one of the plants that yield arrowroot. It is not an indigenous plant, but is a native of America. The Palms contain some half-dozen species of *Dypsis* and one or two of *Phloga*. Ferns are abundant in the forests, and the tree-ferns, of which about 20 are known, chiefly belonging to the genus *Cyathea*, give a special charm to the vegetation.

A large number of trees in the forests afford valuable timber, among which may be mentioned the following:—Various species of *Weinmannia*, known to the natives as "Lalona," especially *W. Bojeriana*, *W. minutiflora*, and *W. eriocarpa*; several species of *Elæocarpus*, as *E. rhodanthus*, *E. quercifolius* and *E. dasyandrus*, all of which, with others belonging to the same genus, are known as "Vanana" or "Voanana;" one, if not more trees, belonging to the genus *Elæodendron*, which the Malagasy call "Hazondrano." "Valanirana" (*Nuxia capitata*) and "Lambinana" (*N. sphærocephala* and *N. terminalioides*) also afford timber much used in house-building. There are also several species of *Macaranga*, called by the natives "Mokarano," as *M. obovata*, *M. alnifolia*, *M. myriolepida*, and *M. ferruginea*, the last of which supplies abundant resin, the nature

which is unknown. Then there is a species of pine, *Podocarpus madagascariensis*, called by the natives "Hetatra," the only species of the Pine Order (Coniferæ) known in the island. It affords a valuable timber much used in house-building. It is not, as stated in the 'New Bulletin of Miscellaneous Information' for May, 1888, "doubtfully native," but truly so. The genus *Tambourissa* contains two or three small trees known as "Ambora." *Dalbergia Baroni*, and probably one or two other members of the genus, which the Malagasy know as "Voamboana," supply a very useful and valuable wood much used by the natives in the manufacture of furniture, &c. *Neobaronia phyllanthoides* is a very remarkable tree with compound phylloclades, from the edges of which spring small bright purple papilionaceous flowers and a coriaceous and indehiscent pod about an inch and a half long. Its native name is "Harahara," and it affords an extremely hard wood used for various purposes. (*N. xiphioclada*, also called "Harahara," possesses similar wood, but it is found in the Central Region.) *Dilobeia Thouarsii* also supplies a hard wood used in carpentry and house-building. It is known as "Vivaona." Then there are several species of *Diospyros*, but whether any of them yield ebony I cannot say. *Diospyros haplostylis*, *D. megasepala*, and *D. sphaerosepala* are found in the forest east of Antsiranana. *D. gonoclada* occurs somewhere between Imerina and the sea, and *D. fusco-velutina* is found on the east coast. *Tetractis clusiaefolia*, an endemic genus of Ebenaceæ, probably also supplies a useful wood. There are also several trees known by the generic term "Varongy" (not *Calophyllum Inophyllum*, as given in some publications, for this is the Foraha"), which supply wood much used in house-building. One of these is *Ocotea trichophlebia*, belonging to Laurineæ. Another tree affording a useful wood is "Famelona," but apparently it is as yet unknown to science.

Among trees or shrubs supplying useful products, &c., are *Landolphia madagascariensis* and *L. gummifera*, climbing plants from which is obtained the india-rubber exported from the island; *Urophyllum Lyallii*, which is probably the shrub known by the Malagasy as "Fatray," which yields a bark used by them in the manufacture of rum; *Ravensara aromatica*, called "Havozomangidy," with very aromatic bark, probably also used in the manufacture of rum. Another tree, possibly also a species of *Ravensara*, with the native name "Havozomanitra," possesses strongly but agreeably aromatic bark (or wood?). The "Nato" tree (possibly *Labramia Bojeri*), found in certain localities, affords a bark largely employed by the natives in dyeing. A tree with a large delicious fruit is the "Voantsimatra" (*Salacia dentata*?), which would doubtless be a welcome novelty to gardeners. *Elæocarpus sericeus* also deserves mention, as its young leaves when pressed and dried form the beautiful objects known as "gold leaves." A bamboo known as "Volotsangana" (*Cephalostachyum Chaplieri*) is one of the most useful of all the vegetable products found in the forests. It is used by the natives for all sorts of purposes, which it would be wearisome to enumerate.

#### THE CENTRAL REGION.

The Central Region, whose boundaries have been already defined, occupies the elevated plateau of the interior. Its height varies from

about 2500\* to 8500 feet, the average possibly being about 4000. Speaking generally the Region consists of bare, brown, desolate, undulating moorlands which, from their lack of verdure, are extremely monotonous and dreary. Trees and shrubs are few and far between; green grass is only occasionally to be seen; and flowers possessing much beauty are scarce. There are, however, a few localities here and there to which this description will not apply, but these are mere oases in the great wilderness. The valleys in some places contain a few shrubs and trees, and several of them in the western portion of the Region are almost filled with the shrub *Smithea chamæchrista*. A few patches of forest are also occasionally to be found, but they are so few and so small as to produce little change in the dreary aspect of the country. The Region for the most part is covered with coarse, wiry, brown grasses growing chiefly in tufts. Among the most common of these grasses are *Pennisetum triticoides*, *Aristida Adscensionis*, *A. multicaulis*, *Setaria glauca*, *Andropogon Schœnanthus*, *A. hirtus*, and *A. Cymbarius*. The last two, especially *A. Cymbarius*, grow so thickly and to such a large size (10 or 12 feet) in many of the uninhabited portions of the western part of the Region as to render travelling almost impossible.

The Region includes numerous mountains, among which is Ankaratra, the highest in the island. It is an old much denuded volcano, and is therefore composed of lava, chiefly basaltic, which has flowed from the mountain and covered an area of country probably not less than 1500 or 2000 square miles. In some places there are large alluvial tracts, but with these and a few other exceptions the soil consists of decayed gneiss and allied rocks, for the Central Region, as is the case also with the Eastern Region, is occupied by Crystalline (probably Archæan) schists, chiefly gneiss. The Region, having been dry land for many geological periods, has suffered extensively from denudation, and the rock, in many parts, has decayed to a depth of nearly 200 feet. The many rivers and streams, unceasingly at work, have wrought, in the course of ages, great changes; the river Kitsamby, to the west of Ankaratra, may perhaps be specially mentioned for the enormous gap it has made in the surface of the country.

I have long been convinced that the soil of Madagascar has been far too highly praised; probably in the western parts of the island, where the rocks are sedimentary, the soil, in many places, would be suitable for agriculture; but in Central Madagascar especially, where the soil consists chiefly of decayed gneiss, it cannot be said to be, as a rule, fertile.

The temperature of the Region varies of course with elevation and latitude. At Antananarivo (the Capital), Mr. Richardson, of the London Missionary Society, has taken observations for some years back, and from figures which he gives (ANTANANARIVO ANNUAL, No. xi. pp. 394—396) we learn that, in the year 1887, the greatest heat registered in the shade by a self-registering thermometer at a height of 4540 (4700?) feet above the sea was on the 6th of November, when it reached 85° Fahr. The coldest day seems to have been August 23rd, when the mercury, at its highest, reached 54°. The next coldest day was June 15th, the

\* The Mandritsara valley is even lower than that.

mercury standing at 56°. The hottest nights were in January, when the mercury on several occasions did not fall below 70°. The coldest night was on June 16th, the temperature being 38°.

The rainy season occupies the five months from November to March, but during only about a hundred days is there any rainfall, and on many of these the downpour is slight. As a rule the rain commences in the afternoon, about 3 o'clock, and lasts for two or three hours, though sometimes much longer. The time in which there is the greatest rainfall is from about the middle of December to the end of February. During the seven months of the dry season rain very rarely falls. In the year 1887 only 8·37 inches fell in these months, and more than half of that was in September and October. Mr. Richardson, who has for a long time registered the rainfall at the Capital, tells us that the average for the seven years 1881—1887 was 53·46 inches.

The Central Region has been much more thoroughly explored botanically than either of the other two Regions, and it may be safely said that there are comparatively few novelties left to reward future explorers. Herbs and small wiry suffruticose plants preponderate in the flora, trees and shrubs being comparatively few. Of the 1236 species found in the Region about 900 belong to the former and 336 to the latter: that is to say, about three-fourths of the plants are herbaceous or suffruticose. In the Eastern Region, on the other hand, and probably also in the Western, more than half of the flora is composed of trees and shrubs.

Another peculiarity of the flora of the Central Region is that, as might be expected, it is of a more temperate character than that of either of the other two Regions. Anonacæ have but one or two representatives; Piperacæ are rare; Palms do occur, but they are by no means abundant. It is much the same with other tropical Orders. Many of the tropical genera, too, found in the other Regions are either entirely or almost absent in the Central. On the other hand, forms of a temperate type are comparatively abundant. Of Ranunculacæ there are 18 species in the island (14 of *Clematis* and 4 of *Ranunculus*), about half of which are confined to the Central Region. All the Cruciferæ, of which, however, there are but 3 or 4 species, also belong to it, though *Cardamine africana* slightly oversteps the eastern boundary. At least 30 out of the 34 plants belonging to Crassulacæ are confined also to this Region. There are only 4 members of Caryophyllæ known in the island, belonging to as many genera, only one of which is found outside the limits of the Region. Of the 18 species of Umbelliferæ the greater number occur here alone, *Peucedanum capense* and *P. Bojerianum*, as also *Carum angelicæfolium*, being only found at a considerable elevation (5000 feet and upwards). Nearly all the members of Ericacæ are also confined to this Region. The 5 species of Primulacæ (4 of *Anagallis* and 1 of *Lysimachia*) also occur only here. Of the 24 species of Gentians nearly all are either confined within the limits of the Region or just exceed them. This is the case also with Iridæ. The only Madagascarian willow (*Salix madagascariensis*), and the only two representatives of the Sandal-wood Order (*Thesium madagascariensis* and *T. cystoseiroides*) also belong here, the willow being abundant at the east foot of Ankaratra mountain, and the latter being small plants confined to the highest mountains.

Here also we have such temperate or sub-temperate genera as the following, those marked with an asterisk being quite confined to the Central Region :—*Linum*\*, *Pelargonium*\*, *Lebeckia*, *Argyrolobium*\*, *Genista*\*, *Alchemilla*, *Crassula*, *Kitchingia*\*, *Cotyledon*\*, *Epilobium*\*, *Telephium*\*, *Hydrocotyle*, *Pimpinella*, *Anthospermum*\*, *Helichrysum*, *Stabe*\*, *Cineraria*\*, *Hieracium*, *Lactuca*, *Wahlenbergia*, *Vaccinium*, *Agauria*, *Philippia*, *Cynoglossum*\*, *Helleria*, *Harveya*\*, *Streptocarpus*, *Micromeria*\*, *Selago*\*, *Salvia*\*, *Stachys*\*, *Ajuga*\*, *Corrigiola*\*, *Chenopodium*, *Rumex*, *Aristea*\*, *Geissorhiza*\*, *Kniphofia*\*, *Cæsia*\*, *Scirpus*, *Carex*, and *Bromus*\*. In addition to these may be mentioned the following species :—*Viola abyssinica*\*, *Geranium simense*\*, *Caucalis melanantha*\*, *Drosera ramentacea*, *Agauria salicifolia*, *Sanicula europæa*, *Hypericum japonicum*\*, *Cotula multifida*\*, *Limosella aquatica*\*, *Juncus effusus*\*, *Asplenium Trichomanes*, and *Aspidium aculeatum*.

*Viola abyssinica*, the only Madagascarian violet, is confined to the higher elevations of the Central Region. *Geranium simense*, the only Geranium in the island, exists abundantly in woody places. *Caucalis melanantha* inhabits the more elevated localities. *Drosera ramentacea* occurs everywhere in Central Madagascar in damp places. *Agauria salicifolia* inhabits chiefly the mountains of the interior, although it slightly invades the Eastern Region. *Sanicula europæa* also occurs in the higher portions of the island. The common bracken (*Pteris aquilina*) and *Lycopodium clavatum* occur also in great abundance, the former near, and the latter in and about, the forests of the interior. The royal fern (*Osmunda regalis*) and the male fern (*Nephrodium Filix-Mas*) are very plentiful in the Central and the higher portions of the Eastern Regions.

Very remarkable is the distribution of the first six of the above plants. The Violet occurs, as Mr. Baker has remarked, at the height of 10,000 feet in Fernando Po, and 7000 feet in the Cameroons in West Africa, almost under the equator, and in the mountains of Abyssinia, as well as in Madagascar from 6000 feet to the summit of Ankaratra, 8494 feet, the highest point in the island. Mr. Thompson has also recently discovered it on the mountain of Kilima-njaro. The Geranium has a precisely similar range of distribution. *Caucalis melanantha* occurs in Central Madagascar, at an elevation of 9000 feet in Abyssinia, of 7000 to 8000 feet in the Cameroons, and of 7000 feet in Fernando Po; and has also lately been found by Mr. Thompson on Kilima-njaro. *Drosera ramentacea* (as also *Lonchitis occidentalis*, found in north-east Madagascar) appears on the mountains of Angola and Guinea; and *Agauria salicifolia* is common to the mountains of Madagascar, Reunion, the Cameroons, and the high land about Lake Nyassa. *Sanicula europæa* "occurs in Central Madagascar, the mountains of Abyssinia, the Cape, 4000 to 7000 feet in the Cameroons, 4000 feet in Fernando Po, and is widely spread through Europe and other parts of the north temperate zone." It may be added that *Cyanotis nodiflora*, var. *madagascaria* finds its home in Angola and Madagascar; and that *Commelina Lyallii*, a variety of *Commelina Mannii* of the Cameroons, also inhabits the interior of the island. These interesting facts point plainly to the existence of a former cold (or temperate) climate within the tropics, followed by a warmer period when these temperate plants, in order to maintain an



existence, were compelled to retreat up the mountains, where they remain to the present day.

The genera most largely represented in the Central Region are:—*Helichrysum* (36 species), *Cyperus* (32), *Senecio* (31), *Vernonia* (22), *Habenaria* (20), *Philippia* (18); *Hypoestes* and *Cynorchis*, with 16 each; *Kalanchoe* (16), *Scirpus* (15); *Indigofera* and *Kitchingia*, with 14 each; *Oxalis*, *Crotalaria*, and *Euphorbia*, with 12 each; *Psorospermum* and *Ficus*, 11 each; *Hibiscus*, *Dombeya*, *Desmodium*, *Ipomœa*, and *Panicum*, 10 each; *Clematis*, *Impatiens*, *Mundulea*, and *Conyza*, 8 each; *Hydrocotyle*, *Stenocline*, *Polystachya*, and *Fimbristylis*, 7 each; *Polygala*, *Grewia*, *Vitis*, *Solanum*, *Stachys*, *Eulophia*, *Angræcum*, and *Aloe*, 6 each; *Gymnosporia*, *Eriosema*, *Rubus*, *Oldenlandia*, *Psiadia*, *Utricularia*, *Thunbergia*, *Salvia*, *Phyllanthus*, *Satyrium*, *Vellozia*, *Carex*, and *Andropogon*, 5 each.

Ankaratra, about 20 or 30 miles south-west of the Capital, is, as has been already said, the highest mountain in the island, reaching to 8494 feet above the sea. It does not come within the snow-line, snow indeed being entirely unknown in the island. Ice is, however, occasionally seen in the winter season. As this mountain is the highest in the island, it may not be uninteresting if I give here a list of the plants which appear to be confined to it,\* and which are endemic in Madagascar. It will be seen from the list that the flora of the mountain has a more or less temperate aspect. The plants are as follows:—*Clematis dissecta*, *Polygala mucronata*, *P. emirnensis*, *Oxalis xiphophylla*, *Impatiens trichoceras*, *Crotalaria orthoclada*, *Indigofera thymoides*, *I. piniifolia*, *Rubus pauciflorus*, *Alchemilla bifurcata*, *Kalanchoe pumila*, *K. brevicaulis*, *Dicoryphe viticoides*, *Rotala cordifolia*, *Telephium madagascariense*, *Hydrocotyle tussilaginisfolia*, *Pimpinella ebracteata*, *Peucedanum Bojerianum*, *Panax confertifolium*, *Anthospermum polyacanthum*, *Vernonia inulæfolia*, *V. ochroleuca*, *V. scapiforme*, *Psiadia stenophylla*, *Helichrysum retrorsum*, *H. cryptomerioides*, *Stenocline filaginoides*, *Aspilia Baroni*, *A. Bojeri*, *Hieracium madagascariense*, *Lightfootia subaphylla*, *Agauria littoralis*, *Philippia oophylla*, *P. pilosa*, *P. macrocalyx*, *Lysimachia parviflora*, *Anagallis peploides*, *Jasminum puberulum*, *Cynoglossum cernuum*, *C. discolor*, *Alectra pedicularioides*, *Tetraspidium laxiflorum*, *Hypoestes ascendens*, *Micromeria flagellaris*, *Salvia porphyrocalyx*, *Stachys oligantha*, *S. sphaerodonta*, *Ajuga robusta*, *Corrigiola psammatrophoides*, *Euphorbia ensifolia*, *Croton emirnensis*, *Acalypha Radula*, *Aristea angustifolia*, *Kniphofia pallidiflora*, *Rhodocodon madagascariensis*, *Scirpus multicosatus*, *Cladium pantopodum*, *Carex sphærogyna*, *Stipa madagascariensis*, *Eragrostis brizoides*, *Cælachne madagascariensis*, *Bromus avenoides*, and *B. arrhenatheroides*.

#### THE WESTERN REGION.

With the exception of Southern Madagascar, no part of the island is so little known as that included in this Western Region, especially perhaps the territory between Lat. 16° and Lat. 20°. The Region, as a whole, is not very mountainous. There is a mountain-chain, however, of no great height, known as Bongolava, which runs with remarkable regularity paralleled to the longitudinal axis of the island for many hundred

\* Some of these, and the list does not profess to be exhaustive, may possibly also occur on some of the other high mountains, such as Vavavato.

miles. To the west of this, again, there is the long mountain-range of Bemaraha paralled with Bongolava. But the Region, generally speaking, slopes very gradually down to the sea, and consists of wide comparatively level or slightly undulating stretches of country, covered with coarse grass and innumerable groves and patches of wood. Running north and south for hundreds of miles at a distance generally of eight or ten leagues from the sea, there are extensive forests, but how far these are continuous it is impossible to say. These forests, as a rule, are much less crowded with undergrowth, and are therefore less impenetrable, than those on the eastern side of the island.

The country is drained by numerous rivers, of which the Sofia, Betsiboka, Manambolo, Tsiribihina, Kitombo (or Mangoky), and Onilahy, all of which take their rise in the mountains of the interior, are the largest. As for the geology of the country, the rocks belong almost entirely to the secondary formations, and chiefly to the Jurassic and Cretaceous series; indeed the eastern boundary of the Region almost coincides with the limit of the sedimentary strata. As a rule these strata have been but little disturbed and, roughly speaking, have a very slight dip towards the west coast. They consist chiefly of sandstone and limestone, with beds of shale and clay.

The heat is much greater in the western than in the eastern part of the island, but what the temperature may actually be is at present unknown. In the north-west of the island in the month of November I have seen the mercury rise to  $140^{\circ}$  Fahr. in the sun; but as this was the highest figure on the thermometer, the actual heat was probably greater. In regard to the temperature of the south-western portion of the island, the Rev. A. Walen says:—"In the so-called rainy season the heat on the south-west coast is intense and, in the middle of the day, is almost unbearable."

Very little also is known in regard to the rainfall of the Region, no record, so far as I am aware, ever having been kept. But there can be no doubt that there is much less rain in Western than in Eastern Madagascar, the moisture brought by the south-east trade-winds being almost entirely absorbed by the eastern mountains. Mr. Walen says:—"The soil of the country is fertile, but on account of the very small rainfall during the rainy season (there are frequently long droughts), it produces very often but little return to an agriculturist, being liable to failure of crops and years of scarcity. During the two years I spent on the coast there was scarcely any difference in the rainfall between the rainy and the dry seasons. The rain was very scarce indeed all the year round. Only slight showers occasionally fell in both seasons of the year, varied by some few heavy squalls from the north-west . . . . . The rainy season (from October to March) is also the hurricane season. As to the amount of rain, there is a great difference between the east coast and the west coast, the former of which gets a superabundance of it all the year round. A year of scarcity has perhaps never been known on the east coast, but it is no uncommon thing on the west coast."

The flora of the Western Region is not yet so well known as that of the other two Regions, and the majority of the 1008 plants I have enumerated as belonging to the Region have been gathered in the north-west, from Lat.  $16^{\circ}30'$  to Cape Amber (including the islands near

the mainland, especially Nosibe), and in the country about Ankavandra in Lat. 19°. A few have also been collected in the south-west. The general aspect of the country as regards verdure is much less luxuriant than the eastern side of the island. Vegetation is least dense in that portion of it which adjoins the Central Region, the shrubs and trees being largely confined to the banks of the rivers and streams. The "Rotra," a large tree, which is a species of *Eugenia*, the "Sodindranto" or "Sohihy" (*Cephalanthus spathelliferus*), and a kind of "Lalona" (*Weinmannia lucens*) are the commonest of the trees which occupy the river-courses in this portion of the Region. The two former, however, seem to be abundant on the river-banks in all parts of Western Madagascar, but in the parts nearer the sea they are accompanied by numerous other shrubs and trees, which form a flora peculiar, or almost peculiar, to the river-sides.

The numerous warm valleys of the western part of Madagascar are chiefly occupied by the following trees and shrubs:—A species of *Ficus* (*F. cocculifolia*), *Orchipeda Thouarsii*, the *Eugenia* common on the river-banks, *Hibiscus phanerandrus*, *Alyxia lucida*, the Tamarind (*Tamarindus indica*), and some other trees and shrubs. Some of the valleys are almost exclusively occupied by the Rofia Palm (*Raphia Ruffia*), one of the most abundant trees in the island, though always found in valleys. In the elevated Central Region it exists sparingly, the climate being somewhat too cold for it. The Mango tree, escaped from cultivation, also frequently occurs in abundance in the warm valleys, and attains the dimensions of a very large tree. In marshy hollows and on river-sides the "Via" (*Typhonodorum Lindleyanum*) is very common. The *Ficus* above mentioned, whose native name is "Adabo" or "Adabovavy,"\* has a fruit from four to six inches in diameter. It is one of the very commonest trees in the western parts of the island, although it is chiefly confined to the valleys and the river-banks. A second species of *Ficus* (*F. sakalavarum*), very similar to this in outward appearance, known as "Adabolahy," but with a much smaller fruit, is also somewhat common, but by no means so abundant as the "Adabovavy." *Alyxia lucida*, a climbing shrub belonging to the Apocynaceæ, has a pod-like bright scarlet fruit composed of a series of oblong joints. The natives call it "Andriambavifohy," and use the bark and leaves in the manufacture of rum. As for the Tamarind-tree, its original home is unknown. At the present time it occurs in Madagascar (in the Western Region only), Tropical Africa, India, North Australia, Mauritius, and Rodriguez. Now I am strongly of opinion that the tree is truly indigenous in Madagascar, for, in the first place, it does not merely occur (as introduced plants almost always do) near villages, or along the road-sides, or in scattered patches; it is equally distributed and widely spread throughout the whole of Western Madagascar, whether in valleys or on the open plains. It has, moreover, purely native names, which is not always the case with introduced plants. Its names are "Madilo" and

\* Literally, "the female Adabo." Whenever there are two species of trees, shrubs, or herbs of similar outward appearance (which may or may not be botanically allied), the natives affix the word "vavy"—female, to the one with the larger leaves (or occasionally larger fruit), and the word "lahy"—male, to the one with the smaller leaves (or smaller fruit). The reason for this I do not know, but it is the universal practice.

"Madiro." It is also called "Kily," from which the word "Sikidy" (divination) is probably derived, the seeds of the tree being employed in the working of the divination board. For these reasons, but chiefly from the mode of its distribution, I am convinced that the tree is truly a native of Madagascar, and that, if it is not also indigenous in other countries, the western part of the island forms its original home. The Sakalava, it may be remarked, employ an infusion or decoction of the leaves as a vermifuge and as a remedy for disorders of the stomach; they also obtain from the tree a kind of black dye.

On the west coast, especially perhaps near the mouths of rivers, there are numerous and extensive mangrove swamps. One of the most common of the mangroves is the *Rhizophora mucronata*, which occurs on the sea-shore in many parts of the tropics of the Old World. The Malagasy name of the tree, as probably also of other mangroves, is "Honko."

The Leguminosæ, as may be seen from the table on page 332, is by far the most abundantly represented Order in the Western Region, occupying as much as 18·8 per cent. of the flora. The Euphorbiacæ come next, but these are only represented by 7·7 per cent. The Compositæ, which in the Central Region comprise 13 per cent. of the flora, being the head of the list, as also Rubiacæ, here stand at 3·2 per cent. There seem to be but two Orders, the Hydrophyllacæ (2 spp.) and Aristolochiacæ (1 sp.), which are confined to this Region. On the other hand, a goodly number of Natural Orders represented, though in some cases by but one or two species, in the other Regions, are entirely or almost absent from the Western Region. Rutacæ, Cactæ, Goodenovicæ, Araliacæ, Vacciniacæ, Ericacæ, Primulacæ, Myrsinæ, Lentibulariæ, Selaginæ, Illecebracæ, Phytolaccacæ, Nepenthacæ, Proteacæ, Balanophoræ, Santalacæ, Coniferæ, Cycadacæ, Salicinæ, Burmanniacæ, Iridæ, Hypoxidacæ, Naiadacæ, and Eriocaulonæ are apparently quite absent from the Region; and Ranunculacæ, Cruciferæ, Guttiferæ, Geraniacæ, Crassulacæ, Melastomacæ, Umbelliferæ, Campanulacæ, Loganiacæ, Gentianacæ, Scrophulariacæ, Gesneracæ, Labiatæ, Monimiacæ, Laurinæ, Loranthacæ, Urticacæ, and Liliacæ have in it but few representatives.

The most abundantly represented genera are:—*Grewia* (28 species), *Hibiscus* (21), *Ipomæa* (18), *Dalbergia* (18), *Euphorbia* (18), *Indigofera* (15); *Croton* and *Cyperus*, with 12 each; *Dombeya* and *Desmodium*, 11 each; *Bauhinia*, *Mimosa*, and *Albizzia*, 9 each; *Alsodeia*, *Buettneria*, *Erythroxylon*, *Mascarenhaisia*, and *Ficus*, 8 each; *Popowia*, *Polygala*, *Commiphora*, *Crotalaria*, *Terminalia*, *Homalium*, and *Acalypha*, 7 each; *Tristellateia*, *Æschynomene*, *Cassia*, *Phyllanthus*, and *Tragia*, 6 each; *Clerodendron* and *Macaranga*, 5 each. It will be seen from this that there is no genus of plants in the Region forming an undue proportion of the flora.

I shall now briefly refer to some of the trees and shrubs which most largely influence the vegetable physiognomy of the Region, or which, as affording valuable timber, or being otherwise remarkable, deserve special mention. Among the commonest trees and shrubs are *Ficus cocculifolia*, the Tamarind, the Rofia Palm (*Raphia Ruffia*), the "Rotra" (*Eugenia*, sp.), the "Sohihy" (*Cephalanthus spathelliferus*), and Wein-

*mannia lucens*, all of which have been already referred to. In addition to these there are the following:—*Hyphæne coriacea*, a small, probably endemic, fan-palm, which is exceedingly abundant, in some places covering the whole face of the country. The native call it "Satramira," and use its fruit very largely in the manufacture of rum. Another fan-palm (probably a species of *Hyphæne* or *Latania*), called "Satrambe," is also extremely common. It is a much taller tree than "Satramira." The Sakalava often use its leaves with graceful effect in building their huts. Another fan-palm, a much larger one than the two former, though not so common, is that known as "Befelatanana" (=the big hand); it is possibly *Bismarckia nobilis*. None of these fan-palms occur in either the Central or Eastern Region, except in places where they have been planted. The "Sakoana" (*Sclerocarya caffra*) is also one of the commonest trees in the Region. It possesses an acrid edible fruit used, I believe, by the natives in the manufacture of rum. *Acridocarpus excelsus* is also widely spread. It has long, slender, straggling branches, and looks as though it had but recently given up the habit of climbing, common to so many members of its family. Its native name is "Mavoravina" or "Kirajy." *Albizia Lebbek*, which the Malagasy call "Bonara" (=Bois Noir), *Brehmia spinosa*, *Urena lobata*, *Erythroxylon platyclados*, called by the natives "Tampia" or "Tampiana," and *Phyllanthus Casticum* must also be ranked among the most common shrubs and trees of this part of the island. All the above live in the open country, and from their abundance and wide distribution give a distinct character to the general vegetable physiognomy of the Region.

Inhabiting this part of the island also is the introduced *Eriodendron anfractuosum*, known as "Pamba" or "Moraingy." It is a somewhat strange-looking tall shrub or tree, a member of the family Malvaceæ. The natives use the hairs from the seeds in stuffing cushions; if, however, they get into the eye, they are said to injure it, if not actually to induce blindness. On the west coast three species of Baobab (*Adansonia*) are plentiful. Of one of these M. Baillon says:—Son écorce est textile; elle sert à couvrir les cases et à faire des cordages. Le bois est tendre et spongieux; à l'époque de la végétation active, il fournit par incisions une sève qui n'est guère que de l'eau et qui est bonne à boire. Il y a, à Mouroundava, des maisons de commerce qui exploitent en grand les semences. M. Grévé ne dit pas quel usage on en fait; mais je suppose qu'il doit s'agir d'une extraction d'huile. Les fruits renferment outre les semences, une pulpe comestible, analogue, sans doute, à celle du Baobab commun. Mais ce qu'il y a de remarquable, c'est que les maisons de commerce dont il est question exploitent aussi la portion la plus blanche et la plus molle de l'écorce. Peut-être est ce pour en tirer une substance gommeuse ou mucilagineuse, cette sorte de suc laiteux dont parle Bernier." The Malagasy names of the tree are "Reniala," "Bontona," and "Za."

Among the most common plants found in woody places may be mentioned the "Manary" (*Dalbergia trichocarpa*, and probably one or two other species of *Dalbergia*), which afford, I believe, a useful timber (exported to Europe?), and the "Amokombe" (*Gardenia succosa*), from which exudes a kind of gum. In similar places is to be found the "Agy" (*Mucuna axillaris*), a climbing plant which is remarkable for the

very virulent stinging properties of the hairs which cover its pod. Not far from the sea grows the "Sorindrana" (*Sorindeia madagascariensis*), a tree with bunches of sweet edible fruit. On the west coast (as also on the east coast) occurs the *Guettarda speciosa*, the tree which yields the wood known by cabinet-makers as zebra-wood. The Sakalava call it "Tambaribarisà."

Of the trees and shrubs found in the forests of the Western Region we possess as yet little definite information, although a large number of them are now known to science. The well-known Malagasy ebony is apparently an inhabitant of these forests. Its wood is smuggled out of the country by the Sakalava, and exported to Europe. But to what species of *Diospyros* the ebony belongs has, I believe, never yet been ascertained. At present there are 22 species of *Diospyros* known in the island. Thirteen of these, if not more, are found in the Eastern Region. It is not unlikely that the tree (or trees) which supplies the ebony is one (or more) of the following:—*Diospyros gracilipes*, *D. toxicaria*, *D. Pervillei*, *D. parvifolia*, *D. lenticellata*, or *D. microrrhombus*, the last of which is described as:—"Ebenier de Madagascar; son bois est superbe."

#### CHARACTER AND RELATIONSHIP OF THE MADAGASCARIAN FLORA.

Mr. Baker, in the paper he read at the meeting of the British Association at York in 1881, has described the general character of the flora of Madagascar, and has shown its geographical relationship. Of genera that are cosmopolitan he says that "nearly all are represented in the island." As instances he gives the following:—*Cyperus*, *Panicum*, *Polypodium*, *Acrostichum*, *Asplenium*, *Pteris*, *Ficus*, *Piper*, *Phyllanthus*, *Croton*, *Loranthus*, *Psychotria*, *Indigofera*, *Vernonia*, *Solanum*, *Eugenia*, *Ipomœa*, *Vitis*, *Gouania*, *Hibiscus*, *Gomphia*, *Ochna*, *Desmodium*, *Crotalaria*, *Acalyphæ*, *Cleome*, *Capparis*, *Cassia*, *Dalbergia*, *Eragrostis*, *Commelina*, *Dioscorea*, *Dalechampia*, *Andropogon*, *Scleria*, *Kyllingia*, *Mimosa*, *Jussiaea*, and *Homalium*.

Of widely-spread species Mr. Baker reckons that there are in the island probably no fewer than 150.

Of tropical species widely dispersed through the Old World there are probably no less than 100 occurring in Madagascar. "Amongst these latter aquatic plants are represented by such species as *Nymphæa Lotus* and *stellata*, *Limnanthemum indicum*, and *Utricularia stellaris*; trees and shrubs of the muddy swamps of the sea-shore by the mangroves and their associates (such as *Rhizophora mucronata*, *Bruguiera gymnorhiza*, *Sonneratia alba*, *Lumnitzera racemosa*, *Thespesia populnea*, and *Avicennia officinalis*); and shrubs not especially maritime by such plants as *Schmidelia racemosa*, *Colubrina asiatica*, *Ormocarpum sennoides*, *Desmodium lasiocarpum* and *umbellatum*, *Premna serratifolia*, and *Securinea obovata*."

The close affinity of the flora with the floræ of the other Mascarene islands Mr. Baker illustrates by showing "the range of a few genera which are confined to the Mascarene group." As instances he mentions *Danais*, *Aphloia*, *Fœtidia*, *Obetia*, *Radamæa*, *Phyllarthron*, *Colea*, and *Stephanodaphne*.

Mr. Baker also shows that there is a close affinity between the flora of Madagascar and that of Tropical Africa, on the one hand, and the

flora of the central elevated parts of the island with those of the Cape and the mountains of Central Africa, on the other. This he illustrates by instances too numerous to be here enumerated. There is, however, let me add, probably a closer alliance between the flora of Tropical Africa and that of the Western Region of Madagascar, than with the floras of the Central and Eastern Regions.

Finally, Mr. Baker shows that there is a slight special affinity between the flora of Madagascar and the floras of Tropical Asia and the Malay isles. This is evidenced by the existence in the island of, for example, *Cyclea madagascariensis*, *Murraya exotica*, *Nepenthes madagascariensis*, *Stephanotis floribunda*, *Strongylodon madagascariensis*, *S. Lastellianum*, *Hernandia peltata*, *Azelia bijuga*, *Barringtonia speciosa*, *Alyxia erythrocarpa*, *Lophatherum geminatum*, *Strobilanthes madagascariensis*, *S. hispidula*, *Lagerstræmia madagascariensis*, *Eriocaulon fluitans*, and *E. fenestratum*, all of which, except the last four, are found in the Eastern Region, and several on the east coast only.

The data upon which the above affinities are based might now be considerably increased, but as further particulars would only serve to confirm the relationship of the flora as shown in the above paragraphs, it is needless to enumerate them.

In regard to the fauna of Madagascar, it has long been known that a considerable number of creatures living in the island at the present time are closely allied to American forms. This affinity is specially marked in some of the reptiles and insects. Now there is also, strange to say, a certain, though slight, amount of affinity between the flora of Madagascar and that of America. Of the genus *Omphalea*, for instance, belonging to the Order Euphorbiaceæ, there are 8 species, 7 of which belong to Tropical America and 1 to Madagascar. Of the genus *Pedilanthus*, belonging to the same Order, 2 are found in Madagascar, and all the rest (about a dozen) in tropical America. Of the Order Scitamineæ, again, the genus *Myrosma* has one species in Madagascar and 11 in Tropical America. The well-known Malagasy "traveller's tree" (*Ravenala madagascariensis*), belonging to the Order Musaceæ, finds its representative in *Phenakospermum guianense*, Endl. (really a species of *Ravenala*), which inhabits N. Brazil and Guiana, and is the only other species of this genus. Of the grasses, *Echinolæna* has one species in Madagascar and one in Guiana and Brazil. *Lycopodium dichotomum*, of the Order Lycopodiaceæ, seems to be confined also to Madagascar and America.

Doubtless this list might be enlarged, but it is sufficient to show that there is a slight relationship between the flora of Madagascar and that of Tropical America; and this relationship, whatever the explanation of it may be, is probably to be accounted for by the same causes as those which have brought about the affinity between the two faunas.

In considering the flora of Madagascar as a whole, one of the first things that strikes us is that the island must be of immense antiquity. About three-fourths of the species and a sixth of its genera of plants are endemic! And this is as it should be; the genera have for the most part survived the untold ages that have elapsed since their first appearance, while the species have been subjected to enormous modification. Such a very large amount of specific differentiation seems to me to point in the clearest manner to long isolation. The antiquity of the island

No.

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is also abundantly evidenced by the remarkable character of its fauna, a subject, however, which need not here be discussed. At what period the island was connected with the adjacent continent it is impossible to state with certainty, but as Nummulitic limestone occurs on a great part of the west coast of Madagascar, there seems to have been probably no land connection in Eocene times; and as the inroad of the higher forms of mammals into South Africa from the Euro-Asiatic continent took place, as Mr. Wallace shows, probably in later Miocene or early Pliocene times, Madagascar must have been cut off from the mainland at least not subsequent to the later Pliocene period, as the absence of such mammals in the island proves. This would allow time for the migration of the mammals to South Africa, which would not unlikely keep pace with the gradual lowering of the temperature going on in the northern hemisphere. This also would explain the existence of the "comparatively cold period" succeeded by "a warm period," during both of which, or some part of which, as Mr. Baker points out in one of the propositions given below, Madagascar must have been joined to the mainland. For it is now well known that in the northern hemisphere in Tertiary time there was a gradual lowering of the temperature from that of a tropical to a temperate or even a cold climate. This being of course reversed in the southern hemisphere, we should have a cold period followed by a warm one. It seems probable, therefore, that Madagascar was joined to the African continent during some part or parts or the whole of the Miocene (including Oligocene) and early Pliocene periods.

In summing up the character of the flora of Madagascar, Mr. Baker lays down the following propositions:—

1. "The flora of the tropical zone throughout the world is remarkably homogeneous in its general character, and to this general rule Madagascar furnishes no marked exception. There is no well-marked plant-type largely developed in the island which is not found elsewhere, and none absent that one might *a priori* expect.
2. "About one in nine\* of the genera are endemic; but they are all small genera, mostly belonging to the large Natural Orders, and closely allied to cosmopolitan generic types.
3. "There is a close affinity between the tropical flora of Madagascar and that of the smaller islands of the Mascarene group.
4. "There is a close affinity between the tropical flora of Madagascar and that of the African continent.
5. "There are a few curious cases in which Asiatic types which do not occur in Africa are met with in Madagascar, and these bear a very small numerical proportion to the great mass of the flora.†
6. "There is a distinct affinity between the flora of the hill-country of Central Madagascar and those of the Cape and the mountain-ranges of Central Africa."

The history of the island, as indicated by the plants, Mr. Baker sums up as follows:—

\* More correctly about one in six.—R.B.

† I may here mention my belief, though I have not gone into the matter with sufficient care absolutely to prove it, that the Asiatic element in the Madagascarian flora is mostly confined to the Eastern Region.—R.B.



1. "A very early comparatively cold period, during which Madagascar was joined to the mainland. The plants which remain from this period now have their head-quarters in Cape Colony, and are found upon the high mountains of continental Africa and Madagascar. When I say cold, I mean a temperate climate, not very unlike ours at the present day.
2. "A warm period, during which (or some part of which) Madagascar was joined to the continent of Africa, and also to Mauritius, Bourbon, and the Seychelles. Shown by the present extension to Madagascar and the lesser isles of the characteristically tropical African species and genera.
3. "A lengthened period of isolation."

In the form of an Appendix I may here give a list of plants introduced into Madagascar by human or other agency which, though many of them have established themselves in the island and become naturalized, can scarcely be incorporated in the native flora.

#### INTRODUCED PLANTS.

*Brassica campestris* occurs in the Central Region; *Sinapis juncea*, Central Region; *Senebiera didyma*, Central Region; *Arnotto* (*Bixa Orellana*), apparently subsponaneous in E., Cent., and W. Regs., in Imerina it is called "Sahy" (=bold), because, as I have been told by the natives, an infusion of its leaves invigorates people in dancing, public speaking, &c., and in former times it was given to fighting-bulls to make them fierce; *Hibiscus Abelmoschus*, Cent. and E. Regs.; *H. Sabdariffa*, Cent. and E. Regs.; *Eriodendron anfractuosum*, W. Reg. near villages; *Zizyphus Jujuba*, E. and W. Regs.; *Moringa pterygosperma*, E. and W. Regs., on the coast near villages; *Crotalaria fulva*, Cent. Reg.; *Dolichos axillaris*, Cent. and E. Regs., in some places escaped from cultivation; *Fagelia bituminosa*; *Casalpinia sepiaria*, largely planted throughout the island for fences and stockades round villages; *Hæmatoxylon campeacheanum*, E. Coast, it is the Bois de Campêche, which yields logwood; *Cassia lævigata*, Cent. and E. Regs., chiefly near villages; *C. Sophora*; *C. Fistula*, N. Madag.; *Parkinsonia xuculeata*, E. Coast; the Sensitive Plant (*Mimosa pudica*), subsponaneous on E. Coast; *Leucæna glauca*, Cent. and W. Regs.; *Telfairia pedata*; *Opuntia Dillenii*, used largely throughout the island for fences and stockades; *Eupatorium triplinerve*; *Ipomœa purpurea*, Cent. and E. Regs., subsponaneous; *Ipomœa Bona-nox*, W. Reg.; *Solanum auriculatum*, Cent. and E. Regs., said by the natives to be of comparatively recent introduction; *S. Richardi*, E. Reg.; Cape Gooseberry, Cent. and E. Regs., common in woody places; *Nicandra physaloides*, Cent. and E. Regs.; *Stramonium* (*Datura alba* and *D. Tatula*), Cent. Reg., waste places; *Angelonia Gardneri*; *Martynia diandra*; *Barleria Prionitis*, Cent. and W. Regs., chiefly near villages; *Verbena bonariensis*, E. Coast; *Vitex trifolia*, E. Coast; *Amarantus hypochondriacus*, Cent. Reg., near villages; *Gomphrena globosa*, W. Reg.; *Chenopodium ambrosioides*, widely dispersed; *Rivina lævis*; *Myristica fragrans*; the Candle-nut tree (*Aleurites triloba*); *Jatropha Curcas*, throughout the island near villages; Jack-fruit and Bread-fruit; *Canna indica*, E. Reg., near villages; Guinea-grass (*Panicum*

*jumentorum*), subspontaneous in E., Cent., and W. Regs.; *Pennisetum spicatum*, E. Reg.; and *Azolla pinnata*, E., Cent., and W. Regs.

Of plants that are probably introduced may be mentioned the following:—*Stellaria media*, Cent. Reg.; *Malva crispa*, Cent. Reg.; *Abutilon angulatum*, Cent. Reg.; *Hibiscus esculentus*, Cent. and E. Regs.; *H. diversifolius*, Cent. and E. Regs., rarely occurs except in hedges near towns and villages; *Clitoria ternata*, W. Reg.; *Phaseolus Mungo*, W. Reg.; *P. adenanthus*, W. Reg.; *P. trilobatus*, W. Reg.; *Pterocarpus Marsupium*, E. Reg.; *Poinciana pulcherrima*; *Acacia Farnesiana*, Nosibe; *Bidens leucantha*; *B. bipinnata*; *Lactuca indica*, E. Reg.; the Sowthistle (*Sonchus oleraceus*), Cent. Reg.; *Vinca rosea*, now widely spread, especially in Cent. Reg.; *Beaumontia grandiflora*; *Amarantus tristis*, Cent. and E. Regs.; *Myristica philippensis*, N. Madag.; *Phyllanthus distichus* and *P. Urinaria*; *Croton Tiglium*; *Pistia Stratiotes*; and the Ginger-grass (*Andropogon nardus*).

The trees, shrubs, and herbs cultivated in gardens are too numerous to mention, but the following are among the most common:—*Garcinia Gerrardi*, Cent. Reg.; *Hibiscus Rosa-sinensis*; *H. mutabilis*; *Melia Azederach*; *Acacia heterophylla*; *A. podalyriaefolia*; *Eucalyptus Globulus*; *Callistemon lanceolatus*; the Passion-flowers, *Passiflora incarnata*, *P. cærulea*, and *P. suberosa*; *Luffa acutangula*; *Trichosanthes anguina*; *Zinnia elegans*; *Tagetes erecta*; *Plumbago zeylanica*; *Carissa edulis*; *Nerium Oleander*; *Petunia nyctaginiflora*; *Tecoma capensis*; *Gendarussa vulgaris*, used for hedges; *Stachytarpheta mutabilis*; *Verbena chamædrifolia*; *Salvia coccinea*; *Bougainvillea spectabilis*; the Camphor-tree (*Cinnamomum Camphora*), known by the natives as "Ravintsara"; *Agave Ixili*; and *Furcraea gigantea*.

Of introduced fruits, cereals, vegetables, &c., there are:—The Chinese Litchi, on E. Coast; Custard-apple, E. and W. Coasts (?); *Anona senegalensis*, W. Coast, probably introduced; *A. squamosa*; *Spondius dulcis*, E. Coast; Cashew-nut, W. Coast; Mango, mostly throughout the island; Loquat; Jamrosa; Pomegranate; Guava (common and Chinese, the former almost naturalized in some places); Papaw, E. Coast; Banana; Avocado Pear; Orange; Lemon (*Citrus Aurantium*, almost naturalized in some places); Lime (?); Pineapple; Mulberry; Peach; Plum; Apple; Quince; Strawberry; Grapes; Figs (the last seven not being as yet largely cultivated). Then there are the common Indigos, *Indigofera tinctoria* and *Crotalaria incana*, both of which are subspontaneous; the Earth-nuts, *Arachis hypogæa* and *Voandzeia subterranea*; *Phaseolus lunatus*; *Vigna sinensis*; *Dolichos Lablab*; the Pigeon-pea (*Cajanus indicus*), largely cultivated, especially in South Betsileo, for silkworm-feeding; Peas; the Bottle-gourd (*Lagenaria vulgaris*); *Benincasa cerifera*; Melon (*Cucumis Melo*); Water-Melon (*Citrullus vulgaris*); Red Pumpkin (*Cucurbita maxima*); *Momordica Charantia*; Tilseed (*Sesamum indicum*); the Capsicums, *Capsicum frutescens* and *C. annua*; Castor-oil plant; Cloves (?); the Egg-plant (*Solanum Melongena*); Vanilla; Henna dye (*Lawsonia alba* and *L. inermis*), N., N.E., and N.W. Coasts; Hemp; Cotton (*Gossypium barbadense* and *G. herbaceum*); *Piper Belle*, E. Coast; Tobacco; Turmeric (*Curcuma longa*); Cocoa-nut, sometimes planted on the coast; Arrowroot (*Tacca pinnatifida* and *Maranta arundinacea*); Millet (*Sorghum vulgare*, *S. halepense*, and

*Panicum miliaceum*); the Bajree of India (*Pennisetum spicata*), cultivated in a few places; the Natchull or Ragee of India (*Eleusine coracana*), cultivated occasionally; Yams (*Dioscorea sativa* and *Colocasia antiquorum*, which latter is the "Taro" of the South Seas and the common "Saonjo" of the Malagasy); Wheat; Maize; Manioc; Rice; Sweet Potato; Sugarcane; Coffee; Chicory (rare); Tea is being tried at the present time, but only, I believe, by the inexperienced natives; Potato; Cabbage; Turnip; Radish; Beetroot; Carrot; Onion; Celery; Parsley; Mint; Tomato; Watercress; Lettuce; *Spilanthes Acmella* and *S. oleracea*; and *Brassica juncea*.

R. BARON.—ED.

## THE ORATORY, SONGS, LEGENDS, AND FOLK- TALES OF THE MALAGASY; PART III.

(Continued from ANNUAL No. XIV.)

### CHAPTER IV.—CHILDREN'S GAMES.

THE next division of our text-book (Rev. L. Dahle's *Specimens of Malagasy Folk-Lore*) treats of Children's Games, "*Lalaon' ny Ankizy*," and as these are not without interest as illustrations of national habits and ideas, a few extracts may be given. There is a short introduction, evidently from a native source, describing the way in which Malagasy children play:—Two or three joining together go to fetch their companions, the parents saying, "Go and play, for here are your friends calling you, for it is bright moonlight (lit. moonlight (is) the day)." And so they all go on to other houses until a number are assembled, and they choose some spacious piece of ground. All having come together, they find out who of their companions are absent, two or three, or more, who are lazy and won't come, and these they make fun of, singing out, "Those who won't play because all their thoughts are about eating, are friends of the cooking-pot; take care you don't choke with a little bit of skin." Those indoors hearing this, answer, "That's all very fine; you see our fat fowls, and so say, 'Come and play.'" (These children who don't play are often still killing fowls or geese, or cooking their share, the gizzards and livers, and feet and heads.) So when they go out either that evening or on the following day, they are saluted with shouts of "Stuffed with gravy, Ikalovy! Stuffed with gravy, Ikalovy!" and also, "Keep by yourselves like lepers, O!"

The first play on the list is called *Rasarindra*, the meaning of which word is not very clear, but the game seems very like the common game of English children called "Fox and Geese."

#### *Rasarindra.*

They all stand in a row, every one with his or her\* *làmba* (the outer

\* These games are chiefly played by girls, or by girls and very young boys.

cloth) tightly girded round the waist, the tallest in front, and the younger and weaker behind them, each taking hold of the tightly-bound dress of the one in front. Then one who is biggest is chosen to catch the rest, and this one is called "the robber." And another of the big ones is chosen to be "children's mother," to take care of the little ones. As soon as all are arranged, the "robber" calls out, "Where is Such-an-one for us?" mentioning first those who are hindmost. Calling out thus she comes near to the mother, who answers, "We won't give up Such-an-one." Then touching the biggest one, she says, "Where is the children's mother for us?" Then they all shout out, "We won't give up children's mother." Then the catcher calls out again, "Where then is our little lamb?" So the youngest at the end of the line answers "Meh" (imitating the bleat of a lamb). Then the catcher replies, "Here's our little lamb," and does her best to catch the youngest and last of the row. Having caught this one, she then tries to catch those next in the line, one after another, until they are all caught, the children's mother meanwhile protecting them all in her power.

Then follow descriptions of two games somewhat resembling what is known in England as "Oranges and Lemons," and ending with "Here comes a lighter to light you to bed; here comes a chopper to chop off the last man's head." They are called

*Sōamiditra* (lit. "Good entering") No. 1.

Two of the tallest in the party stand up and face each other, leaving a space between them for a gateway; and clapping their hands together, they sing:—

Soamiditra e, miditra e, e mi-  
ditra e!

Good entering O, entering O,  
entering O!

Then the lesser ones form a line and take fast hold of each other, and stooping down, sing out:—

Valala manjoko a;  
Kitraotrao!  
Valala mandry a;  
Madriaria!

Locusts stooping O!  
Fight, fight;  
Locusts lying down O!  
Lie down, down!

And so they go on, entering the gateway formed by the two tall ones, and when the least come up to them, then these two turn round also.

*Sōamiditra* No. 2.

The second variation of the above game has more singing in it; but the children arrange themselves in the same way, the two tallest ones and the rest singing alternately as follows:—

Manasa, relahy, manasa e!  
Tsy ho any, relahy, tsy ho any e!  
Nahoana, relahy, nahoana e?  
Tsy ho vary, relahy, tsy ho vary e!  
Ho vary, relahy, ho vary e!  
Tsy ho hena, relahy, tsy ho hena e!  
Ho hena, relahy, ho hena e!  
Tsy ho akoho, relahy, tsy ho akoho!  
Ho akoho, relahy, ho akoho e!

We invite (you), friends, we invite you !  
 We won't go there, friends, we won't go there !  
 Why not then, friends, why not ?  
 Not for rice, friends, not for rice !  
 For rice, friends, for rice !  
 Not for meat, friends, not for meat !  
 For meat, friends, for meat !  
 Not for fowls, friends, not for fowls !  
 For fowls, friends, for fowls !

And so they go on, mentioning other kinds of food; and then all the different fruits. When this is finished, the little ones go forward to enter, making at the same time a loud noise and singing:—

Varavaràn' Andriambolamena,  
 Ka intelo miditra toy ny akanjo,  
 Mpandrafitra arivo toy ny fanantana.

Doorway of Golden Prince,  
 Entering three times like the dress,  
 Carpenters a thousand like the weaving staff.\*

Another "variant" of this song was given by the Rev. J. Richardson, together with the Sol-fa notation of the tune to which it is sung, in "Malagasy Tònon-kira (songs) and Hymnology" in ANNUAL II. 1876, p. 24 (*Reprint*, p. 153).

The two next plays described are called *Sakòda*, a word whose meaning is not at all clear. The first of these is played thus: the children sit in two opposite rows: one side calls out, singing to the other, and is answered as follows:—

Rafara e, Rafara !  
 Ahoana e, ahoana ?  
 Nankaiza e ivadin-driako ?  
 Lasa e nandranto.  
 Raha maty e, atao ahoana ?  
 Fonosin-dravin-tatamo.  
 Ravin-tatamo tsy mahafono azy,  
 Fa lamba mena no mahafono azy.

Rafàra O, Rafara† !  
 What is it then, what is it ?  
 Where has your husband gone ?  
 He's gone away a-trading.  
 Should he be dead, what then ?  
 Wrapped in leaves of water-lily.  
 Water-lily leaves won't wrap him,  
 But a red lamba‡ will wrap him.

Then they change the song and sing:—

Very vakana aho, rizavavy !  
 Vakana inona, rizavavy ?  
 Jijikely, rizavavy.  
 Hombaina mitady va, rizavavy ?  
 Kilalaoko omeko andriako,  
 Kilalaoko omeko andriako !

I've lost my beads, lasses !  
 What sort of beads, girl ?  
 Little beads, lasses. [girl ?  
 Shall we go with you to seek them,  
 My toys I'll give my lady,  
 My toys I'll give my lady !

And when that is finished, they all rise and leap about like frogs, at the same time slapping their chests; and those who are tired first and stop are considered as beaten.

The *Sakòda* No. 2 is much the same kind of game, but with different words.

\* This is the literal translation, but the allusions are obscure.

† A common name for a girl, a contraction of Rafàravavy, the "last female," youngest girl, in a family.

‡ Among the Hova and some other tribes the dead are always wrapped tightly in a number of red cloths or *lamba*.

Another game is called *Dian-tràndraka*,\* i.e. "Hedgehog steps," and is played by all the party arranging themselves in rows, those behind taking hold of those in front, all singing and bending down in imitation of the movements of the animal which gives its name to the play.

Another game, resembling our English children's play of "Tig" and "Touching wood," is called *Kibòkabòka* (*bòka* is the Malagasy word for a leper); it is played thus:—

The children all take fast hold of hands and form a large ring, and put one of the number to stand in the middle of the circle. Then they go round and from side to side, singing

Those who touch this one are lepers ;

Those who touch this one are lepers.

And those who touch the one in the centre they call *bòka* (a leper) and place in the middle as well, not stopping the game until every one has been touched. And when that is finished, every one bows down to the ground and says : "Listen, O grandfather beneath the earth, for I am no leper, for the lepers at Naméhana† only are lepers." Then they spit, saying "Poà."‡

In the second form of this game the children assemble in some numbers, and one of them hides a small stone, concealing it inside the palm of the hand, putting it opposite one or other of his fingers. He then bids his companions choose, and when one guesses rightly the finger where the little stone is, that one is called *bòka*, and they all rush away to save themselves upon some stone. But when they come down on the ground, they are chased by the one called *bòka*, and if he touches any one, then his leprosy removes to the one touched. And so they go on until all have had their turn. At the end they all spit, and say "Poà, for it is not I who am a leper."

Another game is called *Mifàmpibàby*, i.e., "Carrying each other on the back," the little ones being carried by the big ones round the house, with the following ditty:—

Carry me on your back, O big one !

Where shall I carry you, eh ?

Carry me to follow a clod, oh !

What sort of clod is that, eh ?

The Tàkatra's§ nest, I mean, oh !

That Takatra whose mate is dead, eh ?

Take me home, O big one.

"Star-killing" (*Mamòno kintana*) is the name of another children's game, also a favourite one on moonlight nights. A number of them sitting together get a little sheep's dung, and then, looking at the stars, they choose one of the brightest, and say, "We'll kill (or put out) that one."

\* The *Tràndraka* is a small animal allied to the hedgehogs, belonging to the family Centetidae, of the Order Insectivora.

† This is one of the old towns in Imérina, where those afflicted with leprosy live (or used to live) separate from other people.

‡ It is a common practice with the Malagasy to spit if they smell anything offensive. See *Folk-Lore Record*, Vol. ii., p. 37.

§ The *Tàkatra* (*Scopus umbretta*) is a bird which builds a very large and conspicuous nest in the trees or on rocks, using an enormous quantity of dry grass and sticks, &c. See article on "Madagascar Ornithology," p. 295.

one of them who has a good voice sings the following, the rest  
 up the strain :—

Rubbed with sheep's dung,  
 Tomato seed, gourd seed ;  
 Cucumbers full of flattery,  
 Flattered by that deceiver,  
 Shall he die whose fate is evil ? &c., &c.

omewhat more elaborate game is called *Pétapétaka Inénibé* (*pétaka* s "adhering to," "sticking to," and *Inénibé* is "granny"). A number ldren being gathered together, they all choose one about whom ay, "Dead is Granny Mrs. Moon-dead-by-day-but-living-by-night" Extinguished-by-day-but-lighted-by-night," *Ravòlana-màti-andro-ka-ilina*). This one they place in the middle and cover her up with a ity of clothes. Then they all pretend to weep, and sing out :—

Oh granny O ! oh granny !  
 Desolate, desolate, say I, O !  
 Your grandchildren young locusts passing.  
 And so wake up, wake up, say I, O !  
 For miserable are the many children ;  
 And so come back, come back, say I, O !  
 For starving are the many little ones !

they call out for some time, telling the calamity which has befallen

Then they keep quite still for a little while, which they call the for sleeping, and for the old lady to appear to them all in their is (literally, for "pressing," or "squeezing," a word used to express pposed inspiration of people by the *Vazimba*,† or by the spirits of ancestors). During this time the one they call the dead old lady ds to inspire (or appear in dreams to) them all, and calls out :—

Oh little children, O !  
 Oh little children, O !  
 Cross over all of you,  
 For on return of this,  
 Sunday will be here,  
 And I shall rise up then.

a little pause, they all speak, saying : "Granny pressed me (or red to me) that she'll be alive (again)." Waiting a little longer hey say, "The time's come." Then granny gets up, and they pat ith their hands, saying :—

Petapetaka Inenibe,  
 Petapetaka Inenibe.

they all rejoice very much, dancing and beating their breasts, and g and making a loud humming noise, with these words :—

---

ese are believed to be the aboriginal inhabitants of the central provinces of Madagas- ace short of stature, and unacquainted with the use of iron ; and are said to have been westward by a Hova king, named Andriamanélo. A remnant of this tribe is said to be sting in the western part of Madagascar. Their tombs are regarded with superstitious nd they are supposed to appear to people in their dreams. They are mostly malevo- rits, according to the popular belief.

Kodonga Rambita,\*  
 Kodongo-dahy ;  
 Kodonga Rambita,  
 Kodongo-dahy.

The annual festival of the *Fandroana* or Bathing at the new year is a time of great rejoicing among the Malagasy, or, more strictly speaking, among the Hova in the central provinces. On the day when bullocks are killed, the children in Antananarivo assemble in great numbers in Imàhamàsina, a large plain below the city to the west, and at Isòanie-ràna, to the south-west. They all put on clean *làmba* and dresses, wearing earrings and necklaces, and some being carried in palanquins. They carry with them fruit of different kinds, and small plates, bottles, glasses, and baskets, and go along singing until they come to the places just mentioned. Arrived at Imàhamàsina, each party places the fruit on the plates, and fills the glasses with water. One division then calls out:—

May we enter, ladies ?

The others reply:—

Pray walk in, ladies ;  
 Certainly, ladies.  
 We bring you a little feast.  
 May you live long, ladies, in good health ;  
 Yes, may God bless us all, ladies.

and so on, imitating the formal and polite speeches of their elders when paying visits. Then having eaten the fruit, they sing and dance, during the afternoon singing a number of songs, whose titles only are given. The children in the country places have a somewhat different custom, for they take meat with them to feast upon.

Before concluding this part of the subject, another children's amusement may be mentioned, although it is by no means confined to children, viz., songs and ditties intended to help in learning to count. Mr. Richardson, in *Folk-lore and Folk-tales of Madagascar* (pp. 42-45), gives ten specimens of these productions, one of them being a song of ten verses of four lines each, but most having only ten lines, and some only four. In some of these ditties there is a punning on the form of the different words for the numbers up to ten, some word of similar sound being brought in to help the memory. This is much the same as if we, to help to remember the number "one," brought in the word "won" in connection with it ; or with "four," "before ;" or with "eight," "abate," &c. Here is a specimen verse or two:—

- |   |  |
|---|--|
| 1. E, Andrianisa ! e Andrianisa !<br>Aza manisa ny efa tsy nety e !<br>E, homba anao aho re !<br>E, ry izy aroy e !   | 1. O Mister One ! O Mister One !<br>Do not count (lit. "do one") the un-<br>O, I'll go along with you ! [willing O !<br>O, he's yonder there ! |
| 6. E, Andrianenina ! e Andrian-<br>Aza manenina† alohan' ny olona e !<br>E, homba anao aho re !<br>E, ry izy aroy e ! | 6. O Mister Six ! O Mister Six !<br>Do not regret before people O !<br>O, I'll go along with you !<br>O, he's yonder there !                   |

\* Many of the words in these games are really untranslatable, as they have no equivalent in English.

† Playing on the similarity of sound between the words *énina*, six, and *manénina*, to regret. The words are shewn by italics.



8. E, Andriambalo, e Andriambalo ! 8. O Mister Eight ! O Mister Eight !  
 Mivalo\* fanahy tsy haditra e ! Begging pardon, will not be obstin-  
 E, homba anao aho re ! O, I'll go along with you ! [ate O !  
 E, ry izy aroy e ! O, he's yonder there !

In the following the numbers are simply applied to different objects :—

Isa ny amontana,	One the amontana (tree).
Roa ny aviavy.	Two the aviavy (trees).
Telo fangady,	Three spades.
Efa-drofia,	Four rofia (palms).
Dimy emboka,	Five gums.
Eni-mangamanga,	Six blues.
Fito paraky,	Seven tobacco (plants).
Valo tanantanana,	Eight castor-oil (shrubs).
Sivy rongony,	Nine hemp (plants).
Folo fanolehana !	Ten twistings !

In another, words are chosen in each of the ten lines that contain the words for the numbers from one to ten ; they are mostly names of plants, grasses, &c. :—

*Hisatra* (the peel of rushes).  
*Tsindroadroatra* (a grass, *Sporobolus indicus*, R. Br.).  
*Telorirana* a sedge (*Cyperus* sp.).  
*Efanina* (?).  
*Dingadingana* (a shrub, *Psidium dodonæefolia*, St.).  
*Voninenina* (a herb, *Epallage dentata*, DC.).  
*Fitatra* (a bird, sp. of warbler, *Pratincola sybilla*, L.).  
*Kimbalombalontandroka* (the core of a horn).  
*Sivana* (Eng. a sieve).  
*Tsiopolopolotra* ! (the seeds of *Bidens* sp.)

Some seem merely nonsense rhymes ; and others carry on the last syllables of one line to the first of the next :—

Aingisa,	Voa manisa,
Aingoa,	Voa manapily,
Talonga,	Pily maka,
'Ndrafanga,	Maka ity,
Diminga,	Ity koa,
Aiminga,	Tabarasily,
Tsitonga,	Sily kely,
Valonga,	Tangorom-bola,
Tsivaza,	Hazon-dandy,
Aigo !	Tsy folo va izao o ? (Isn't that ten ?)
Roa an-jaza,	Two for the child.
Telo am-behivavy,	Three for the woman.
Efatra an-dehilahy,	Four for the man.
Raika tsy tia be !	One's not liked much !

#### CHAPTER V.—MARVELLOUS CREATURES, OR BOGY STORIES.

In former numbers of the ANNUAL reference has been occasionally made to the Malagasy belief in several fabulous animals (see Nos. i. p. 76 ; x. p. 238 ; xii. p. 471 ; etc.). Eight of these marvellous creatures

\* A play on the words *balo*=*vàlo*, eight, and *mivalo*, to abjectly beg pardon. On account of these similarities in sound to unpleasant ideas, both six and eight are considered unlucky numbers. See *Folk-Lore Record*, Vol. ii., p. 38.

are described in Mr. Dahle's book, and we shall therefore give a translation of what is said about each of them, only omitting a few sentences which are merely wordy repetitions. In a note to the heading of *Sàmpon-jàvatra Sàsany Mahagàga*, or "Sundry Marvellous Stories," it is said that these stories come from the Bétsiléo district, the southern-central province of Madagascar. It will be seen that some of the strange creatures here described are not animals, but have some connection with humanity: the *kindly* being a grisly re-appearance of men after death; the *angalàpona* being a kind of water-sprite; while the *siona* is a diminutive elf of pilfering propensities.

1.—*The Songòmby*.<sup>\*</sup> The *songòmby*, they say, is an animal as big as an ox and fleet of foot, and is said to eat men. In former times (not very long ago) the people in the south thought the horse† was a *songòmby* come from abroad. The way it is caught, they say, is thus: A child is fastened at the entrance of the *songòmby's* den, so that it cries, and a net is spread at the entrance, whereupon the creature comes and is snared. Near our town (says the author of this account) is a hole in the rock where the people think there is a *songòmby*. When it sees any one, it attacks them fiercely, but the female, it is said, does not fight much, but only encourages the male, so that they always go together. It once happened, they say, that a certain man was going about by night and met with the *songòmby*. He fought most bravely all night, and being a very strong man was not hurt. Another story about it is that a naughty child was put by its father and mother outside the house, and would have been devoured by one of these creatures had it not been quickly rescued. And another day, the tale goes, a child was punished in the same way, the parents calling out, "Here's your share, Mr. *Songòmby*!" Then the beast really came up, whereupon the child cried out, "Oh, here he really is!" But the parents replied, "Well, let him eat you," thinking it was only the child's deception. After a little while, they opened the door, and lo! the child had gone. So the parents and the villagers made a great stir, and took torches to seek it, and lo! there was child's blood dropped on the road all the way to the beast's den. Many other stories are also told, which the people think confirm the truth of the existence of this creature.

2.—*The Fanàny with Seven Heads*. This creature, they say, is something which comes from man, for there are certain people whose intestines turn into *fanàny*; but sometimes it does not come from their intestines, but from their corpse as a whole when it becomes corrupt. On this account it is said to be a frequent custom in certain districts in the south for the people to take the intestines of their dead relatives and place them in a river or small pool, so that they may turn into a *fanàny*. But the people who change into this creature, they say, are of royal (or noble) descent. So that because of this belief they kill oxen when they see a large creature they believe to be a *fanàny*, and

\* The two words apparently composing this name mean respectively as follows: *sàngs*, "having the upper lip turned upward, uncovered," and *òmby*, an ox. *Songòmby* means, figuratively, "lion-hearted."

† The horse is of quite modern introduction into Madagascar; it is called, by a corruption of the French word, *sòavàly*=*cheval*.

give it blood and rum to drink and ox-hump to eat. When it first appears, they say it ascends into the town where it was produced, that is, where the person from whom it came formerly lived; and there the people of the place ask it, "Art thou Such-an-one?" And if the name they mention was really its own, it nods its head; but if it does not correspond, it shakes its head. Then they go on mentioning the names of all the famous deceased nobles in the surrounding district until the creature acknowledges one of them as its own; and as soon as this is arrived at, they kill oxen as just described.

The animal is similar in appearance to the water-snake and the *mànditra* (another snake). It is a fierce creature, and has seven heads; and when it is grown full size, each of its heads has a horn growing on it. There was a certain man named Ralàko, who conversed with me (says the narrator of this), and this he says he saw: The *fanàny* fought with a bull during the night, and each fought hard. And during the conflict the *fanàny* did not bite with its mouth, but fought with its seven horns; each of these was successively broken, until at last it was killed by the bull. Just before death it drew itself up and swelled out to the size of a mountain, so that all the villages in the neighbourhood could not be inhabited on account of the effluvium. It was a man from Imàmo (the western part of Imérina, the central province) who told me this, and it was there, he said, that it happened.

There is also another story about the *fanàny* as follows: When it becomes big, they say it encircles a mountain (*Itritriva*\* is said to be one of such mountains); and when its head and tail meet and there is anything to spare besides what goes round the mountain, the creature eats it; and when that is done, some say that it sticks its tail into the earth and mounts up to the sky; but others say that it goes into some great piece of water sufficient for its size. It remained in the lake of *Itritriva*, they say, but when it became too big for the lake, it removed to *Andraikiba* (a lake west of *Antsirabé*, in the same neighbourhood), and there it remains up to the present time.

I have seen the animal called the *fanàny* (says the native narrator), but I have not seen either its seven heads or any appearance of them; and on asking the people the reason of this, they replied that it was yet too young. The size of the creature they pointed out to me was about that of an adult *mànditra*, or somewhat less.

3.—The *Tòkantòngotra* or *Tòkandia* ("Single-foot" or "Singlestep"). This is a large white animal (but smaller than the *songómbi*), which has the foreleg in the middle of its chest and the hind leg opposite the position of the paps. These same legs are in each case one only, they say, whether fore or hind leg.† It is an exceedingly swift animal, so that no other creature has a chance of escaping it. It eats men,

\* This is the name of an extinct volcano in the northern Betsiléo country. The crater is occupied by a lake of profound depth, popularly said to be unfathomable. See ANNUAL xii., pp. 467–472, "The Volcanic Lake of *Tritriva*; its Physical Features and Legendary History."

† It seems from later and more exact information that this description of the *tòkan-dia* is incorrect, and arises probably from our European misinterpretation of the name. *Tòkan-dia* means, as given above, "Single-foot," but refers to the feet as *not being cloven*, and not to the animal's having a single leg in front and a single one behind, as several Europeans, myself included, have described.—Ed. (R.B.)

and goes about at night like the *songòmby*. There are people who say they have seen it, but few compared with those to testify to the existence of the *songòmby*.\*

4.—*The Kindly*. This creature is said to be human. When any one dies who turns into a *kindly*, he is buried by the relatives, until the intestines and the skin of the stomach all decay; and when that is the case, they open up the tomb so that the *kindly* may go out; and it goes out. Their eyes are red and their nails long, but they are no longer like the living; yet the whole body, except the portions already mentioned, is like that of a human being. They are said to be constantly thieving; and when any one leaves out cooked rice or other food, they take it. Sometimes they also steal rice in the bush, but it is said they can hardly carry any burden; and a story is told of some one who saw two *kindly* stealing rice, and hid himself to observe their procedure. They filled with rice some vessel they carried, and the male one carried the burden, putting it on his shoulder; but as soon as it rested there, he cried, "I'm killed; O my shoulder!" Then said the female, "There's no carrying it; where is it? I'll carry it." Then she carried it on her head (that is their custom when both husband and wife die); but as soon as it was placed there, she called out, "I'm killed; O my head!" Another story is told of a person suddenly meeting a *kindly* one day and, seeing the redness of its eyes and the length of its nails, said, "How is it your eyes are so red?" It replied, "God passed by them." Then he asked again, "How is it your nails are so long?" It replied, "That I may tear out your liver" (or inside), upon which it tore the man. In the Betsiléon province people say that there are *kindly* up to the present time, and that not long ago, but quite recently. Among the inhabitants there are many who believe in the reappearance of these bowless people; but they think it a cause of lamentation, both to the person himself and also to his relations, to become a *kindly*.

5.—*The Dóna or Pily*.† This animal is one of the fiercest of creatures; it is big and long, and its skin is striped, so that makers of *lamba* take it as a pattern for striped cloths. During the day it is quite gentle, so that even an infant can play with it and take no harm; but when night comes on, there is hardly any other creature so fierce. They say it bellows like a bull. If any animal or man meets it at night, it encircles him at the loins and compresses him so tightly that, in a very short time, the object attacked is dead. It has the power of making its body big or little, something like india-rubber. It is very crafty, so that when it meets with a serpent (*ménarane*), which is a creeping creature like itself, it appears to be afraid, and

\* It is commonly said that those who even see the *likandia* are immediately struck dead or senseless.

† *Pily* is the name of a serpent. This account is, I think, hardly correctly put under the heading of superstitious beliefs; except in two or three points, it is rather a piece of natural history observation, for there is no question at all about the existence in the western and warmer parts of Madagascar of one or more species of boa. These examples of the widely-spread tropical pythons belong to a peculiar genus, *Sanzinia*: hanging from the branches of the trees, these serpents are said to pounce suddenly on their victims, and, enveloping them in their folds, speedily squeeze them to death. They are even said to kill oxen, and occasionally man, but doubtless a good deal of superstition is mixed up with the native accounts of them.

likes its body small. Then comes the serpent and twines round it, and then raises its tail to strike the *dôna* (for the tail of the *ménardua* is barbed, they say, like a spear, and it kills its victims by this means). When the *dôna* swells its body suddenly, so that the *ménardua* is broken, as if cut with a knife. Such is its power that it is said to be able to force its way out of its hole, although opposed by the strength of the strongest man stopping it up with a cloth stuffed in the entrance. Whistling, it appears, makes the *dôna* angry, although the daytime it is usually tame.

5.—*The Lålomèna or Lålīmèna*. This animal is like the ox, but swims in the water. It has two horns, and they are very red, and it is said to be amongst the strongest of the animals which live in the water. It is difficult to say exactly what its appearance and qualities are, for there is much of the fabulous mixed up with the accounts of it.

It seems possible that this word retains traditions of the Madagascar species of Hippopotamus, an animal whose sub-fossil bones have been found in the alluvial deposits of Antsirabè in the Vakinankaratra district, north of Imèrina, as well as on the south-west coast, and which possibly is still living when the island was first peopled. These remains are said to be called those of the *lålomèna* by the people there.

See ANNUAL XII. pp. 437 and 468.

7.—*The Angalàpona*. This creature is among things which are attributed to man, they say, although it is not so large as a human being. Its abode is said to be in the water, but yet it is not wetted by it; for they say there is a cave within the water into which water does not enter, and there the *angalàpona* lives. The door by which it goes out and in turns in the water, and so is the road by which it issues to and fro, but yet it is not at all wet, although traversing water in this way. As regards its size, it is a little larger than a young child. Its hair is very long, so that when it stands upright, it almost reaches the ground. It is considered by the people to be the director of divination and (fortunate) day foretelling, &c., so that the diviners call upon it when working the oracle with the words, "rise, for thou hast come from Long-hair," &c.

There are two persons still living who say that they have certainly seen it; their names are Rénisóarahanóro and Rainitsimanàhy. The former (a woman) chanced to be in the uninhabited country, and was led by name, a name which is pleasing to the *angalàpona*. (For names such as Rasôa\* and the like are pleasing to this creature, so that it fetches such as bear these names.) So the *angalàpona* came and took her towards its den, passing through the water, but neither it nor the woman was wetted at all. But when they came to the cave, she would not go forward, but remained at the side of the door; neither would she eat food, disliking the things eaten by the *angalàpona* such as raw eels and cray-fish, and the like. And so because she would remain always at the doorway, her clothes became covered with water-moles. So the *angalàpona* and his wife considered together what they should do with her, and they agreed to send her back home.

This is a very common female name among the Malagasy, both in this shortform and in combination with other words. *Ra* is the personal prefix, *sôa* is "good, pleasant, desirable."

This they did after giving her (power to work) divination. And now she is applied to by the people for that purpose.

And Rainitsimanahy's account is that he was in the uninhabited region, and at the time when every one is fast asleep, an *angalâpona* came and desired him to be its husband. But as he would not agree to this, it followed him about perpetually.

Many of the people say that they have seen this creature, especially those who are afflicted with a disease called *jila*.

8.—*The Siona*. The creature so called has also something human about it, but it is different both from the *kinôly* and the *angalâpona*. It is said to live away from men; and when any one goes through the uninhabited country and does not take care of his rice, or chopper, these are taken by the *siona*, they say, and conveyed to its abode. When the woodmen go to sleep, and leave a fire still burning (for their custom is to place a big log on the hearth before sleeping, so that they may be kept warm), then this creature comes and warms itself. Its food is a root called *avôko* (*Vigna angivensis*, Baker) and other substances. All over its body it is covered with lichen growing upon it, so that when it lies down on a rock it is not distinguishable, although seen close to the place. When any people are ill and out of their mind, their friends are afraid lest they shall become a *siona*; and very lately it was reported that some people narrowly escaped this fate, from which they were only saved by the strenuous efforts of their friends.

(To be continued.)

JAMES SIBREE, JUN. (ED.)

## X THE GREAT HOVA CITY.

NOT many years ago comparatively few English people knew anything about Antananarivo. At the outbreak of the late war writers for the press seemed to think it was on the coast of Madagascar, while others spoke of it as on a river easily accessible from the port of Tamatave. Mistakes such as these are now fast disappearing, and most readers of this magazine would, if a map of Madagascar were placed before them, look at once in the right direction for the now somewhat familiar name of Antananarivo. To reach it from Tamatave, the chief port on the east coast, a palanquin journey of more than two hundred miles through deep forest and over difficult mountain roads must be undertaken. The City is situated in the central plateau, in the Highlands of Madagascar in fact, and is nearly five thousand feet above the level of the sea. It is not in the centre of the island, but is really much nearer the east than the west coast, though a glance at a good map will reveal the fact that it is to the west of the watershed, the backbone of the central plateau being at a comparatively short distance from the east coast.

The claims of Antananarivo to be the Capital of Madagascar are not of very ancient date. For a long time indeed it has been the chief town of Imerina, the home of the Hova tribe, but it is not the original Capital of even this province. That honour belongs to Ambòhimànga, a town picturesquely situated on a well-wooded hill ten or twelve miles north of Antananarivo. In public proclamations the names of Ambohimanga and Antananarivo are often linked together; and it is customary for the Sovereign to recognise the claims of the ancient Capital by paying it a visit of state once a year, shortly after the New Year's Festival.

But even when Antananarivo had become the Capital of Imerina, it was far from being the Capital of the whole island. Indeed never till within the last sixty or seventy years did the Government of Madagascar become so consolidated as to give to any one tribe supreme power. The nearest approach to this in olden times seems to have been the position attained by the Sakalava, who are found chiefly on or near the west coast. To these Sakalava the Hova formerly paid tribute. Gradually, however, the Hova power increased until, under the energetic rule of Radàma I. (1810-1828), a large part of the island was conquered; and from that time the Hova Sovereign has borne the title of King, or Queen, of Madagascar, and Antananarivo has been justly named the Capital.

The political influence of Antananarivo is powerfully felt throughout the whole island. In one sense it has a greater relative importance than the Capitals of more civilized countries, as it stands almost entirely without rivals. The conditions of society and the present state of civilization reached by the Malagasy have not led them to congregate in large masses; hence, though village communities abound, there is a singular absence of large towns. Some of the ports, notably Tamatave, are now fast growing in importance; but in the interior of Madagascar there is no other town but that of Fianàrantsòà, the Capital of the Betsilèo province, that possesses any particular claims to importance; and even this town is very small when compared with Antananarivo.

The natives speak with pride of their Capital as the very heart of the country. Not only is it the residence of the Queen and the centre of government, but from it go forth the governors who, in the name of the Queen, rule the dependent provinces. Constant communication, maintained in the old world fashion by government couriers, is kept up between the central Government and all its dependencies; and a despatch from Antananarivo is a decision from which there is no appeal. Indirectly too is the influence—intellectual, moral, and social—of the Capital felt even in the remotest districts. The traveller in almost any part of Madagascar will find government officials and traders from Antananarivo or its neighbourhood, and he will soon see what a strong attachment to the native province still exists, and how Antananarivo fashions and customs are followed in these far off regions.

The name of the Capital is derived from two common words: *tanàna*, a town, and *arivo*, a thousand; and its most probable meaning is: "The Town of a Thousand." It might mean "A Thousand Towns," but the former meaning is the more likely. The plan of telling off a certain number of settlers to live in some newly founded town seems to have prevailed widely in Madagascar, and traces of this custom may often be met with. These settlers were called *voànjo* (literally, earth-nuts). Analogous names to Antananarivo are Fénoarivo (full to a thousand) and Arivonimàmo (the thousand of Imamo).

The general appearance of the City as viewed from a distance greatly impresses the traveller. It is built on the ridge and down the sides of a hill nearly two miles in length, and may be seen in some directions from places twenty or thirty miles away. It is in truth "a city set on a hill that cannot be hid." The crest of the hill is crowned by a group of palaces and

by the house of the Prime Minister, the large glass dome of which glistens in the distance like burnished silver. The sides of the hill are terraced, so that there may be as many as five or six houses one above another; and you may look, not only over a fence into your neighbour's garden, but directly upon the roof of his house on the terrace below you. These terraces are, however, a constant source of trouble and danger. They are built with rough stone, often without much solidity, and, during the heavy rains that fall from November to March, landslips and falling retaining walls are of frequent occurrence. After an unusually rainy night, one is sure to hear of some neighbour or friend whose wall has fallen. It will often cost almost as much to build up these retaining walls as to erect the houses for the safety of which they are required. But expense and inconvenience are not the only drawbacks of this system of terracing; serious accidents often happen, and not unfrequently involve loss of life. A little time since a man was buried alive in such a landslip, and no one knew of his death till the body was found by some workmen who were digging away the fallen earth.

The picturesque is not all we should seek in choosing the site for a large city; and though the first sight of Antananarivo, especially to a traveller just getting to the end of a wearisome journey of eight or ten days, and remembering the wretched huts in which he has been compelled to rest on the way, is most welcome and cheering, and has often called forth expressions of warm admiration, closer acquaintance with the place somewhat damps the ardour of this admiration, and dispels some of the enchantment lent by distance to the view.

As the weary traveller climbs the steep eastern road, he begins to see that there is a general air of disorder and untidiness about the place. There are indeed roughly made roads, but they are sadly neglected, and often great chasms eight or ten feet deep are left unfilled for months. Then the houses are perched about in the most irregular fashion. Each house too is surrounded by a mud wall; and these walls, though they will stand for years, soon show a tendency to crumble and break down. In addition to this, natives have not our ideas about neatness and the importance of keeping a house in good repair. On all hands may be seen houses either never completed or allowed to fall into a wretched state of disrepair. Around you are many buildings that seem to say of their owners: "This man began to build, but was not able to finish." Notwithstanding these drawbacks, however, there are not a few houses that have a comfortable well cared for appearance, and some that look quite gay in the midst of the trees planted around them.

Wonderful changes have taken place in the buildings of the Capital within the memory of present residents. An old law formerly prohibited the use of stone or brick within the ancient boundaries of the City. When the Queen became a Christian in 1868, this law was abolished, and the consequence is that the place has been almost rebuilt. The Roman Emperor Augustus could boast that he found Rome built of brick and left it a City of marble. Many of those now living in Antananarivo can say they remember it a town of wood and rushes, and that they have seen it change into a town of brick and stone, while tiled roofs are rapidly taking the place of the old thatched roofs of former days.

This change has had one excellent result: it has greatly lessened the risk of fire. Twenty years ago destructive fires, demolishing in an hour or two twenty, fifty, or even a hundred buildings, were terribly frequent. Now happily fires are rare, and when they do occur, the danger of spreading is comparatively small.

Before taking a general survey of the main features of Antananarivo, let us cast a glance at the character of the surrounding scenery. To the east the country is extremely broken, only a narrow rice valley dividing the City from the neighbouring hills. These are, except for a few weeks in the depth



the rainy season, bare and brown, and they are deeply scarred by the torrents. Much of the soil is a deep red with masses of granite jutting out in all directions, and in certain conditions of the atmosphere the colouring is very rich; but on the whole the outlook towards the east is not very attractive. On the other sides the country is more open. To the north is the comparatively level and well populated district of Avàdràno, the ancient capital, Ambohimanga, and the hills near it being among the most noticeable features. To the west and south are very extensive rice plains, looking brown and dreary in the cold season, but during the rains possessing wondrous beauty from the delicate green of the growing rice. Skirting this plain in all directions, or rising like islets from the sea of green, are picturesquely situated towns and villages in great numbers. Far away to the south-west is the group of the Ankàratra mountains, rising to the height of nearly nine thousand feet. This is the highest land in Madagascar, and here occasionally the cold is severe enough to produce ice.

But let us now take a nearer view of the Capital itself. On the whole, the impression left on the mind will not be an altogether pleasant one. We must be carried in a simple palanquin, borne by four *màromita*, or bearers, or no vehicle can be obtained. A few horses are used by the richer classes; but the steep and ill kept roads, often terribly cut up by the torrents of rain, make riding difficult, and the ordinary mode of locomotion is the palanquin.

As we pass along, we find the roads thronged with dark-skinned foot assengers, most of whom have bare feet and legs, and not a few bare shoulders. Here we may see a party of bearers, sturdy, muscular fellows, laden with hides, which they will carry, slung on bamboos, two hundred miles to Tamatave; or we may meet others who have just arrived, bearing sales of American calico, or English prints, or tins of paraffin, or loads of flour or sugar, or cases of general merchandise. We shall also be sure to meet women carrying on their heads heavy pitchers of water, or perhaps loads of bricks. In all probability we shall also be shocked by the sight of a gang of men having on their neck and ancles heavy iron rings, connected by long chains. These are the *gàdra-làva*, or convicts, and they are chiefly employed in mending the roads. By the way side we shall see here and there roughly constructed stalls, or rotia cloth umbrellas, sitting under which we may observe petty traders offering for sale rice, fruit, meat, eggs of doubtful age, ginger, native sugar, candles, and other small wares. Hanging round these stalls there is sure to be a crowd of half naked gutter children, and two or three mangy ill-tempered curs, all alike eagerly looking out for any scraps they may be able to pilfer. As we still pursue our journey, we may meet a foreigner or two carried in their palanquins and holding up white umbrellas as a protection against the much dreaded sun-stroke. Or we may hear the thud of many feet, and looking up may see a palanquin coming at full trot, and having a large number of extra bearers and other attendants running at full speed before and after it. In this will be seated some native of rank, probably quite light in colour, and dressed in European costume; the number of his bearers and other followers being a measure of his rank.

As we look around us and examine more minutely the character of this great Iova City, we find how much it lacks that we have been wont to consider essential. We are in a City without streets, at least in our sense of the term, without shop windows, without railway stations, tram cars, or cab stands, with no water supply other than that provided by the springs that bound at the base of the hill, and with no sanitary arrangements. The absence of these, however, is less pregnant with evil consequences than it would have been had the town been built on a more level spot. The rainfall is heavy, and during a storm the main roads become water-courses, down which wild torrents rush, carrying with them immense quantities of

solid matter. These violent torrents are nature's scavengers, and they help to keep the crowded City in a fairly healthy condition. But typhoid fever exists, and may be expected to increase.

The population of Antananarivo cannot be stated with any accuracy, but the most probable estimate is from eighty to a hundred thousand. A very perceptible increase has taken place within the last twenty years, and the town is still growing. Several districts that were formerly regarded as quite separate are now part of Antananarivo itself.

Among the inhabitants there is always a large floating element, composed of those who come to the Capital on government business, or to take part in some lawsuit. Litigation is very common, and in Antananarivo alone are the higher courts, so that every suit of importance is tried there.

Among the important institutions of Antananarivo we must name the Zomà Market, situated at the north-west of the town. As its name Zoma (or Friday) shows, it is properly a weekly market; and though now many traders frequent it daily, only on Friday can the market be seen in all its glory. On Friday morning country people carrying produce of all descriptions may be seen pouring from every quarter to Zoma. By ten or eleven o'clock the large open space is crowded, and even overflows into the adjoining plain of Anàlakely; and from the top of the Fàravòhitra hill the busy hum of the voices can be plainly heard. Stalls are erected in certain parts of the market, but much of the trade is carried on in the open air. Different trades appropriate different sections of the ground. In one spot we may find timber, and a little above nothing but calicoes and prints. In another part of the market iron-work is offered for sale, and near by is the place where mats of all kinds may be obtained. Yonder is the fruit market, and in another part water jars and cooking-pots may be bought. One corner of the market has always aroused indignant feelings in the breasts of foreign visitors. It is the Slave Market. The Government cannot perhaps in the present state of public opinion abolish slavery, but it has done much to mitigate the evils of the system. The public sale of slaves, however, still exists, but we may hope that soon this relic of a non-Christian past will cease to be.

No description of Antananarivo would be complete, if it did not contain some account of how Sunday is observed. Here we see an easily appreciated sign of the changes the Christian religion is producing among the Malagasy people. Since the beginning of the reign of Rànavàlona II no markets have been held on this day. A pleasant quiet reigns throughout the town, broken only by the sound of the church-going bell, and by the throngs of well dressed people going to and from religious services. So fixed is this habit of wearing on Sunday the cleanest and most becoming dress, that Saturday goes by the name of "*Lamba*—washing day," and thus forms an appropriate preparation for the Sunday. The dresses of the women are for the most part white or light coloured, and many of them are handsomely embroidered; and as few of the women wear hats or bonnets, their elaborately plaited black hair shows to great advantage. Boots and shoes were till recently but rarely used, and to a foreigner the sight of naked feet appearing under richly embroidered dresses looked somewhat grotesque. Now many of the higher class of women wear high-heeled boots, in which, however, they find it exceedingly difficult to walk. Many of the men wear some adaptation of European dress, and the favourite hat is of white straw with a broad black ribbon. Whatever may be the underdress, for the most part both men and women retain the loose outer dress called the *lamba*, a plain piece of calico drawn round the back and thrown gracefully over the shoulder. Any one seeing these crowds attending religious services must acknowledge that the people of Antananarivo show a very practical interest in the religion they have accepted.

Antananarivo has recently become so far civilized as to be connected with the port of Tamatave by a telegraph, constructed by a French Company, but

purchased by the native Government. Telegrams from London now occasionally reach Antananarivo in ten or twelve days. An English newspaper (the *Madagascar News*), is published weekly. The editor, Mr. Harvey, is strongly advocating the opening up of the country to commercial enterprise, and fully upholds the cause of national independence. A French paper, the *Progres de L'Imerina*, advocates what are supposed to be the French interests. Two papers in the native language are also published weekly.

For the foreign residents Antananarivo possesses little that can take the place of our public entertainments and amusements. As a newly-arrived French gentleman observed, "There are no distractions in Antananarivo." The natives find amusement in such events as the New Year's festival, the annual visit of the Queen to Ambohimanga, parade days, and political meetings (or *kabary*), the setting out of some great man for exile, or the despatch or arrival of troops. On all these occasions there is an abundant use of gunpowder, and the streets are enlivened by military bands. These attractions draw all classes from their homes, and the roads are lined for hours with spectators. For the more intellectual, concerts, lectures, and meetings of various descriptions are provided. Then, at certain times, school festivals and similar entertainments provide an outlet for the effluence of the younger portion of the population; and by their associations, with the accompaniments of bright dresses, banners, and bands of music, import some gaiety into the ordinary dullness of the place. In addition to this list of "distractions" should be added the weekly opportunity of seeing and being seen, of hearing and imparting news, afforded by the great Zoma market already described; as to the ordinary native, market-day, with all its excitement, its chaffering and its gossip, may safely be reckoned among the delights of life.

Antananarivo has been perhaps justly deemed by many to be a place of sleepy ways; and when compared with a busy European city, this is true enough. But when contrasted with what it used to be, or with any ordinary Malagasy town, it is full of life. There has been a waking up of the country, and all around there are visible signs of the changes that are going on. Religion, education, and commerce have each and all made great progress; and what has already taken place is, we trust, but the promise of better things yet to come. From this "city set on a hill" light is already streaming in all directions. May this light ever grow clearer and stronger; as the influence of this Hova City is felt in far-off provinces, may that influence be one tending in ever-increasing measure to promote truth and justice in the social, political, and religious life of the whole Malagasy people.

W. E. COUSINS.

## VARIETIES.

Explorations in Southern Madagascar. During the year 1889 a scientific mission, promoted by the French Government, explored a good deal of previously unknown territory in the southern parts of Madagascar. Many reports of this mission have been already published in French and German geographical periodicals (see "Literary Notes"); and the following summary of the work accomplished by the mission appeared in the June number of the *Proceedings of the Royal Geographical Society*, translated from the French original. It is accordingly reproduced here.—EDS.

"March 23rd, 1891 : M. de Quatrefages, of the Institute, President of the Society, in the Chair. This was a special meeting, held in the large hall of the Sorbonne, to receive Dr. L. Catat and MM. C. Maistre and G. Foucart on their return from their scientific mission to Madagascar. A large number of distinguished men occupied the platform.

It was in November, 1888, that Dr. Catat, together with MM. Maistre and Foucart, were entrusted by the Minister of Public Instruction with a scientific mission to Madagascar, the object being to elucidate certain geographical points, and to complete our general knowledge of the great island and its people. The party arrived at Antananarivo, from Tamatave, about the middle of March, 1889. Some time was spent in short excursions from the Capital on to the high tablelands of Imérina and into the northern part of the island ; after this M. Foucart was attacked by fever and returned to France.

In August, 1889, what is known as the "Radama route" from the plateau of Imérina to Tamatave, was explored. This route, stated to have been traversed in 1820 by king Radama, was found to be much worse, instead of better, than the ordinary way. Extensive marshes, impenetrable forests, deep ravines, and the precipitous slopes of the Ambôhitrakôholâhy were among the difficulties encountered. It took 23 days to reach the coast by this route, as against six by the usual road. Before returning to the Capital, Dr. Catat made an excursion across the island through the forest of Antongil and by way of Mândritsâra and Belâlitra to Mojangâ on the west coast, whence he regained Antananarivo along the valleys of the Betsibôka and the Ikôpa.

The third and principal journey undertaken by the two travellers had for its object the exploration of the southern part of the island, which was but little known, and where travelling was reported to be dangerous. After considerable preparations, the party set out on the 24th of May from Fianarantsoa for Ihôsy, the last Hova fort towards the south. From there it was their intention to survey the eastern part of the basin of the Onilâhy, then cross over the watershed of the Indian Ocean slope, traverse the valley of the Mandara (Mânanâra), and then to reach Fort Dauphin. It was on the 8th June that the caravan finally left Ihôsy for the unknown south. The route lay through the desert of Hôrombê, which occupies a high and somewhat undulating plateau. Backed on the east by the water divide, this plateau gives rise to numerous streams, which form the right bank tributaries of the Onilâhy. It is covered in places with tall grasses, but otherwise the arid stony soil is absolutely sterile. No trace of a habitation was found. After five days' march, this inhospitable desert was crossed and the village of Bêtrôky reached. On the way a number of Bâra warriors threatened hostilities, but happily there was no conflict. Tho Bâra occupy a large tract of country to the west, south-west, and south of Betsilêo. Those to the west, who have intermingled with the Sakalâva, and those of the south-west, own the sway of King Vôatra, who resides near Isâlo ; they live in more or less amicable relations with the Hova, but quarrel and fight among themselves. With deserters and runaway slaves they form those bands of robbers who, under the name of *fâhavâlo* (enemies), devastate the Betsilêo country. The Bâra of the south are under the dominion of King Sâmbo of Ivôhibê, and are even more jealous of their independence, having only very rarely any intercourse with neighbouring peoples. In the vicinity of Bêtrôky, which lies in a large plain some miles east of the Onilâhy, the country is more populated, and shows some rude attempts at cultivation. South of Bêtrôky an important discovery was made. It was supposed that the Onilâhy, the lower source of which was thoroughly explored by M. Grandidier, took its rise near Ihôsy, on the western slope of the Isâlo range, flowed directly south, and then at 23°30' S. Lat. turned sharply to the west and emptied itself into the Bay of St. Augustine. It has now been ascertained that the

Onilàhy rises among the Emigrant Antanòsy more than a hundred miles further south than hitherto supposed; it then flows north in a large curve and regains Mantaora, the point determined by Grandidier in 1867. Ascending the right bank of the Onilàhy, the travellers arrived at its sources on the 17th June, near the village of Tàmotàmo. The country traversed differs little in its general aspect from the district round Ihòsy: isolated trees, bushes and brushwood in the valleys, tall grass on the mountain slopes, frequent marshes and bogs in the secluded valleys. A dense Bàra population inhabits the numerous villages.

Half a day's march to the west lies Tshivòry, a village of the Emigrant Antanòsy, where a halt was made for a week. The Antanòsy are numerous; intermingled with the primitive race and solidly established in the country, they possess large herds of oxen. They cultivate excellent rice, and travel down to the west coast to exchange their products for European commodities. They are called "Emigrants" because they have left their country of Anòsy in order to escape from the domination of the Hova. The travellers, after having had several interviews with the King of Tshivòry, one of the most important monarchs of the country, returned to Tàmotàmo. This village is inhabited by the Màmambia, who occupy the country to the south. On 28th June the party quitted Tàmotàmo, crossed the Mandrarè, and three days later arrived at the mountains of Bèampingàratra, which give rise to the Mandrarè. This region is partly wooded; the vegetation is very fine. Among the trees the *dontòna*, which had not been met with before, resembles the African baobab; several specimens measured over three feet in diameter. Other strange plants, not known to the travellers, and the large spaces covered with giant cacti, all contributed to give this country a somewhat unique appearance. The travellers then entered the great forest of Bèampingàratra, which covers the flanks and summits of the lofty chain forming the eastern limit of the basin of the Mandrarè, and soon afterwards arrived in the beautiful valley of Ambòlo, and later on at the banks of the Màmampanihy. This valley, with its ebony and rosewood trees, its orange groves, plantations, black and fertile soil, countless streams, rivers, and hot springs, made a profound impression on the travellers. The population is dense. It is composed of the Antanòsy, here called Antambólo. They are peaceable and very superstitious. Traces of the Arab type were observed in many individuals, especially among the chiefs.

On the 5th July, after having crossed the second belt of forests and the littoral zone, the party arrived at Fort Dauphin. The latter place is the original home of the Antanòsy, who are here a finer race than their relations in the north. The region of Fort Dauphin is remarkable for the many evidences which still exist of the old French occupation. In addition to the remains of various works, walls, and fortification, it is to be noted that a large number of the natives use the French language in ordinary conversation. This district is certainly one of the most fertile in Madagascar; the ancient descriptions of Flacourt and of Mandan are very accurate.

On the 30th July the expedition left Fort Dauphin and proceeded along the east coast, which resembles in general that of the north of the island. The village of Màmantèma, at the mouth of the Màmampanihy, is an important one; the river can be ascended in a canoe for a long distance, and is much used by the natives as a means of communication. Further north the village of the Màmambondro, with over 400 huts, is situated on an island of a river of the same name, which at the point measures nearly a mile in breadth. On the 11th August, Vangaindràno, the first Hova station north of Fort Dauphin, was reached. Ascending the right bank of the river Màmànàra, the travellers entered the country of the Antaisàka, which has been completely disafforested. It is well populated, and the large villages, occupying each summit, are surrounded by rice and other plantations.

The Antaisaka resemble most strongly the Bâra and the Tanâla. They possess many customs evidently of Arab origin, and also some which are analogous to those of peoples in the north-west of the island. They did their best to place difficulties in the way of the expedition. The Mânanân is navigable for several hours above Vangaindrano, but higher up its course is obstructed by sandbanks and rocks. At certain points it forms great lakes and marshes, studded with islands, on which the natives have constructed their villages. On the 20th August the party camped at the foot of Mount Ivôhibé, which borders on the south the great plateaus, and terminates the central range, and at the end of the month arrived again at Fianarantsoa.

The itinerary of the travellers, about 5000 miles in length, including 1875 miles of entirely new ground, was surveyed throughout with the compass. Numerous points were astronomically determined. The anthropological, ethnological, and other collections are very valuable.

**The Origin of the Name Madagascar.** My guess is that the name Madagascar, which we got from Marco Polo, did not apply to the island, but to the Somali coast. He got the name from Malay sources. The question is whether *Mala-gosse* or *Mada-gosse* is its earlier form; *gosse* meant 'men' (= 'Bantu') in the old Swahili. *Ma* (<sup>1</sup>/<sub>d</sub>) *a gosse* would be *Ma* (<sup>1</sup>/<sub>d</sub>) *a-men*, the *-ar* being the Malay suffix in Zanzib-*ar*, Nicoba-*ar*, Malab-*ar*, etc., and meaning 'land' or 'island.'

The Hova language is a Malay dialect; 'Malay' means 'mountains.' Hence *Mala-gosc-ar* might be 'The land of the (<sup>Malay</sup>/<sub>hill</sub>) men,' while *Mada-gasc-ar* would be 'The island of the Mada or Madai men,' either the present Madai tribe south-east of the Victoria Nyanza, or else the land of the coast people in the present Somali Land, formerly called *Madun* or *Mādūn*. On this hypothesis, Polo's name would apply to the Somali Land. He describes Madagascar as Mohammedan and full of elephants, plainly *not* the island.

We have another old form in one of the Polo MSS., *Magaster*, where the *Ma-* would be the Bantu plural prefix.—Canon Isaac Taylor.

✓ **The Mineral Spring at Antsirabé.**—Dr. Borchgrevink has kindly favoured us with the following analysis of the water from the chief spring at Antsirabé, which has been made by Prof. Waage, showing the various chemical ingredients contained in a 1000 parts of water :—

Bicarbonate of soda	4·6668
Potassium chloride	·3165
Calcium sulphate	·2943
Magnesium chloride	·2827
Sodium chloride	·2269
Silica	·1304
Carbonate of lime	·0814
Carbonate of iron	·0028

6·0018

These waters, Prof. Waage states, are uncommonly rich in alkalis, in fact are among the richest in the world. The silica, he further says, may have been partly or even wholly dissolved from the glass of the bottles in which the waters were sent. In addition to the above, it may be stated that free carbonic acid gas exists in considerable quantity. The water is closely allied to that of Vichy.

✓ **Ascent of Mount Ambôndrombè.**—Two Frenchmen, Dr. Bessin and Père Tulazac, have succeeded in making the first ascent to the summit

\* This is incorrect. The Rev. G. A. Shaw ascended this mountain more than fifteen years ago; see his account in ANNUAL II., 1876, pp. 50 (*Reprint*, p. 185).

of Ambòndrombè, dreaded by the Bètsilèo as sacred, or *fady*. They, however, found five Bètsilèo willing to accompany them to the top. The party started from Ambòasàry, the nearest village to the mountain, and reached the summit in seven hours. Axes and knives had frequently to be used to clear the way. The mountain is rugged and wooded, reaching a height of 6234 feet. The party had to cross many ravines during the ascent. — *Proc. R. Geogr. Soc. Jan., 1891, p. 39.*

— **Madagascar Rocks.** It may be of interest to some of the readers of the ANNUAL to have a list of the rocks known to occur in Madagascar, though a technical description of the same would probably be out of place in these pages. I have got in my collection rock specimens from all parts of the island, and have at the present time about 250 sections of the same which I have examined microscopically. Of course many other species of rocks are no doubt to be found, as well as varieties of those given below, but the list comprises certainly the most common and important of Madagascar rocks. It may be as well just to say that, roughly speaking, the eastern half of the island consists almost entirely of crystalline rocks (chiefly gneiss) and are almost certainly of Archæan age, and that the western half consists of sedimentaries belonging to the Jurassic, Cretaceous and Eocene systems. The following, though not arranged in any special order, is the list of those I have already identified:—

*Granite.* True granite (with both black and white mica) seems to be rare. The only occurrence I know is the rock of Vombòhitra mountain north of Imèrina.

*Hornblende-granite (or Hornblende-granitite).* Granite with dark mica and hornblende, in addition to the quartz and felspar; common in the eastern half of the island. Occurs also in a dyke crossing the road at Isòtry in the Capital.

*Porphyritic granite.* With dark mica and hornblende in addition to the quartz and felspar. A great mass of it of about ten or twelve miles in diameter exists to the south and south-east of Ambàtovòry (east of Capital): also about Bèdàra on road to Tamatave.

*Graphic granite.* Near the mountains of Vombohitra and Vavavato, as also at Màngalàza, to the east of Ambàtondràzàka in Antsihà-naka.

*Hornblende-granitite-gneiss.* In addition to the ordinary components (quartz and felspar), it contains hornblende and black mica. This is the rock of the Capital, and indeed almost wholly monopolizes the eastern half of the island. It not infrequently contains numerous garnets.

A variety containing bronzite occurs at Ambòhinaòrina, about 20 miles south-east of the Capital.

*Augite-granitite-gneiss.* Contains augite. Rare. At Kiànja, three or four miles east of the Capital, and at Ankisatra in Vakinankà-ratra.

*Tonalite-gneiss.* At Antòby, west of Vavavato.

*Pegmatite.* In many localities.

*Schorl rock.* Black tourmaline and quartz. At Fiherèhana, a few miles north of the Capital.

*Syenite.* Hornblende and felspar. The only known occurrence of true syenite is in Maròantsètra, but doubtless it occurs in many other places.

*Diorite.* Typical diorite is found in many localities. It occasionally contains numerous garnets.

*Mica-hornblende-diorite.* South of Flànàrantsòà, and in the "efitra" west of Lake Itàsy.

*Needle-diorite.* East of Jangôa, north-west coast.

*Gabbro.* Near Amparafaravola in Antsihanaka.

*Hornblende-gabbro.* Near Amparafaravola in Antsihanaka.

*Norite.* In valley immediately north of new hospital, east of the Capital, and many other places.

*Hornblende-norite.* About half a mile east of Ankëramadinika, and west foot of Ambôhimandô mountain.

*Olivine-norite.* Near Amparafaravola in Antsihanaka.

*Pyroxene-granulite.* Ambôhibao, about six miles north-west of the Capital.

*Quartz-pyroxene-granulite.* A little east of Tsinjoarivo in south-east Imerina.

*Pyroxenite.* About 20 miles east of Andranosamônta, north-west coast, and east of Ambiniviny mountain to the south of Mândritsara.

*Hypersthene rock.* Mangalaza, east of Ambatondrazaka in Antsihanaka.

*Hornblende-rock.* Same locality as the preceding, and close to village of Ankazobé in Vônizôngo.

*Augite-scapolite-rock.* Locality unknown. Very rare and remarkable.

*Garnet-rock.* Ampâsimbé, on road to Tamatave.

*Serpentine.* Mândritsara and numerous other localities.

*Soapstone.* A few miles east of Mâhanôro, east coast.

*Mica-schist.* In many localities. Occasionally contains garnet, or garnet and sillimanite; or, as at Vôngo on east coast, kyanite.

*Sillimanite-schist.* This is the rock known as *vâtofidy*, of which the mountains of Ambôhimanoa and Ambôhimiangara in Imerina chiefly consist. It is found also in other localities. It is composed of the minerals sillimanite, quartz, and garnet.

A variety without the garnet is found at Mârotandrano, south of Mândritsara.

*Quartzite.* Numerous localities.

*Crystalline limestone.* Numerous localities.

*Hornblende-schist.* "

*Actinolite-schist.* Between Andriba and Vombohitra in north-west Imerina.

*Tremolite-schist.* Locality unknown.

*Slate.* West of Ambôsitra. Some of this is suitable for roofing. Occasionally it contains numerous exceedingly minute crystals of tourmaline.

*Chiaistolite-slate.* About two-fifths of the way between Máhalévona and Andranovélona in Anônibé on north-east coast.

*Porphyritic diabase.* Ambâhy, south-east coast. A somewhat remarkable rock.

*Calc-sinter (travertine).* At Antsirabé.

*Siliceous sinter.* Various localities.

*Quartz.* In numerous veins, sometimes auriferous. Numerous varieties occur, as Rock Crystal (very large and pure east of Vôhimàrina on north-east coast), Amethyst, Rose quartz, Smoky quartz, Milky quartz, Ferruginous quartz, Chalcedony, Agate, Onyx, Jasper, etc.

The volcanic rocks include the following:—

*Dolerite.* Numerous places between central Madagascar and east coast; very abundant on many parts of east coast, and also in other places.

*Basalt.* Ambôdimadiro on north-west coast; Vakinankaratra, etc.

*Olivine-basalt.* Ankàratra; west of Lake Itasy; Vôtovôrona, a few miles west of the Capital; Antsihanaka; Bêtafo; north end of the island, and numerous other places.

*Nepheline-basalt.* At Anâlatsimisivâhy near Amparafaravola in Antsihanaka.



*Andesitic basalt.* Antòngodrahòja.

*Andesite.* West of Lake Itasy. It generally contains hornblende, and is then *Hornblende-Andesite*.

*Trachyte.* South-west of Ankaratra and east foot and summit (Ambòhitrakòholàhy) of the mountain itself.

*Mica-hornblende-trachyte.* In Anòrontsànga province on north-west coast.

*Nepheline-phonolite.* Near Vavavato mountain.

*Nephelinite.* Four miles east of Fènoarivo in Valàlafòtsy. A very curious and anomalous rock.

*Limburgite.* Ambòngobè, and at five or six miles north of Ambatondrazaka in Antsihanaka.

*Palagonite tuff.* West of Lake Itasy. Other volcanic tuffs are also found here.

The chief sedimentary rocks are as follows : —

*Limestone.* West Madagascar. Several varieties.

*Dolomite.* Mojangà.

*Sandstone.* West Madagascar. Of various colours and textures.

*Carboniferous shale.* Ambàvatòby on north-west coast, and in other localities.

*Lignite.* In various localities.

In the description of the rock of Antanànarivo given on p. 245 in last year's ANNUAL one or two slight alterations are required. On line 5 from bottom, instead of "apatite" insert "rutile" with a query. The mineral described as "sphene" in the middle of p. 246 is in reality hematite.

R. B. — Ed.



## BOTANICAL AND NATURAL HISTORY NOTES.

On the Fertilisation of the Traveller's-tree (*Ravenala madagascariensis*).— This flower shows a great advance on *Musa* in specialization. The flowers are very large, but each peduncle has only seven to nine (in some cases twelve) bracts, which correspond to the almost indefinite number of whorls in the banana.

The bracts, each of which contains a large number of flowers closely packed together, are large (16 inches long) and very rigid, their upper edges being in contact above the flowers, which emerge between their superior edges one by one as they ripen. The three sepals are free in *Ravenala* before the flower rises between the edges of the bracts (in the bud they are closely united round the petals, just as in *Musa*), but a sheath quite similar to that of *Musa* is formed by the close union of the two lower petals only. This encloses the stamens and is hard and sclerenchymatous in structure.

The odd petal is much shorter than the other two, but not very different in shape.

The six stamens enclosed in this sheath are unable to elongate, and hence become very strained. The style has six longitudinal grooves on which the anthers shed most of their pollen (though some is retained in the anthers). Part of the extremity of the style projects through the end of the petal sheath.

When the flower rises between the rigid edges of the bract, it is in a very strained condition, and the two upper edges of the united sepals gradually

separate. In this state, a touch on the end of the sheath sets the two free, the stamens and style at once spring into the position shown in F (in the publication from which this is quoted), while a cloud of pollen is scattered. The two stigmatic lips subsequently open.

It is interesting to note that the two upper edges of the inferior overlap, as in *Strelitzia*, though not to the same extent.

The flowers are often visited by sunbirds: *Nectarinia souimanga* is commonest near Fort Dauphin. The correct position of the bird is on the next highest bract, and then bend forwards and downwards to the sugary liquid by introducing its beak below the odd petal. In this it will explode a virgin flower, dusting its breast with pollen, while older flowers it will touch the stigmatic surface and so effect cross-fertilization. Sometimes it hops into the middle of the flower, however, to reach the honey from the same bract by bending round the bract. Beetles and Hymenoptera often visit the flowers to suck the sugary exude which exudes over the edges of the bract. They will only produce fertilization by accident, however, while the narrow curved beak of the bird is excellently adapted to pass between the edges of the rigid bracts and reach the honey. G. F. SCOTT-ELLIOT, M.A., B.Sc. In *Annals of Botany*, vol. iv., No. xiv., May, 1890, pp. 260, 261; with illustrations.

## LITERARY NOTES.

**New Books on Madagascar.**—*Madagascar: or Robert Drury's Journal, during Fifteen Years' Captivity on that Island. And a further Description of Madagascar by the Abbé Alexis Rochon.* Edited with an Introduction and Notes by Capt. Pasfield Oliver, R.A., Author of "Madagascar." London: Fisher Unwin, 1890, with facsimile of original Map, and illustrations from old works and recent photographs: pp. 399-800. ('Adventure Series,' 5/6.)—*Les Musulmans à Madagascar et aux Iles Comores.* Première partie, les Antaimorona. Par Gabriel Ferrand. Publications de L'Ecole des lettres d'Alger; pp. 163.

**Papers and Pamphlets on Madagascar.**—Among articles in magazines are the following: "Note on the Fertilization of *Musa*, *Strelitzia reginae*, and *Ravenala madagascariensis*;" by G. F. Scott-Elliott, M. A., B. Sc.; *Annals of Botany*, Vol. iv., No. xiv., May, 1890, pp. 259-263; with plate.—Art. "Madagascar" in new edition of "Chambers's Encyclopedia," by Rev.

James Sibree, Jun.; 1890.—"Mada-gatsa: the Story of a Malagasy," by Miss M. T. Bliss; *The Geographical Magazine*, Jan. and Dec., 1890, with illustrations.—"Les Populations de Madagascar," *Rev. française et Exploratrice*, Février, 1890, tome xi. no. 2, pp. 214-218.—3 Letters in *Bull. Soc. de Geogr. commerciale et Industrielle*, 1889-1890, tome xii. no. 2, viz. "Excursion à Madagascar" (Catat. Notes), par Maistre; "de Madagascar," par Foucart; "l'Ouest de Madagascar," par L. de la Vigne; "l'Aus Madagascar," von Dr. H. H. H. in Nossi Bé; *Mitt. d. ostafrikanischen geogr. Kom. gesell. Gallen*, heft i, s. 10.—"La V. Mangoro" avec carte et plan, *Bull. de la Société de Geogr.* 1889-1890, tome xii. no. 3.—Mission à Madagascar, e. De Tamatave à Tananarive, par Georges Foucart; *Bull. Soc. de Lille*, Août, 1889, no. 8.—"Situation à Madagascar;" par (Demanche. (Texte du Tr. Protectorat du 17 Dec., 1885.

*se et Exploration*, 1 Rev. ne x. no. 81.—“Un mot sur scar,” par A. Merchier; *ic. Géogr. de Lille*; Juin, p. 495-517.—“Das Volk der alava, nach den Forschun- norwegischen Missionare L. g und A. Walen,” bearbeitet Kurze; *Mitt. d. Geogr. z. Fena*, 1889; band viii.

heft 1, 2.

**New Map of Madagascar.** Carte des Etablissements Français de Diego-Suarez, Nossi-Bé et Dépendances, publiée avec les encouragements de M. le Sous-Secrétaire d'Etat des Colonies, par Alfred Durand, 1890. Comptoir des Intérêts Coloniaux, Editeur. (*Dulau*.)

### 3F SUMMARY OF IMPORTANT EVENTS IN MADAGASCAR DURING 1891.

**Opening of the New Hospital.** The important public events of must be named the opening of Hospital at Isoavinandriana. pital at Analakely, founded by idson in 1864, has for some een in an unsanitary condi- d before Dr. Fox left, steps ken to raise funds for the of a new building. Mainly the generosity of the sup- of the Friends' Foreign Mis- ociation the required amount raised. The foreign com- in Madagascar have also ed liberally to appeals for nd since the opening of buildings, Her Majesty the he Prime Minister, the palace and many of the churches around Antananarivo have heir appreciation of the good r making special collections the building fund. The raised in this way was £439,\* e contributions of the foreign ity amounted to £166. The ost of the buildings will be than £5000. ite chosen for the new build- xcellent. It is about a mile .E. of Antananarivo, and is e healthiest situations in the

neighbourhood. The buildings were planned by, and have been erected under the superintendence of, Mr. William Johnson of the Friends Mission; and all who have seen them are delighted with their construction and arrangement. There are roomy wards, a special children's ward, consulting rooms, dispensary, drug store, operating room, class rooms, private wards, and also two good residences for the doctor and the lady superintendent.

The opening ceremony took place on Thursday afternoon, August 13th, when Her Majesty Ranavalona III, accompanied by His Excellency the Prime Minister, and many of the Court, together with a large number of foreigners and many of the leading natives, were present. Her Majesty had graciously consented to open the building herself; and on her arrival, she was escorted to the main entrance, which at that time was locked. Little Bertie Fenn, standing before the closed door, very prettily saluted her in native style, and presented her with a silver key with which to unlock the door. She received it, and at once inserted it in the lock; then turning round to the crowd, she said: "This house is now locked; but I

is sum £200 was given by Her Majesty, £80 by the Prime Minister, and more than e palace church.

open it to-day for the healing of all sick people who wish to be nursed. May the blessing of God rest on the sick who are tended here that they may be healed."

The Queen and Prime Minister, with some of their attendants, were then conducted through the building, and were much pleased with the arrangements. The whole place was made as bright and attractive as flowers and pictures and decorations, arranged by the skilful and willing fingers of English ladies, could make it.

After a short rest, the Queen was conducted to one of the wards that had been specially prepared and decorated for the ceremony. Suitable speeches, etc. were made, and the new buildings were thus set apart for the special work for which they have been built.

For days after the opening ceremony a constant flow of native visitors inspected the new buildings;

and when a week or ten days later patients were admitted, it was found at once how highly the healthy situation and superior accommodation are appreciated. The available space has at times been overcrowded; but the second wing will soon be completed, and the accommodation will then be more ample.

During the few months that have passed since the opening the new hospital has been a boon, not only to the natives, but also to not a few of our own fellow-countrymen. These have been miners from the west coast, who, coming up to Antananarivo in a state of great distress, and suffering severely from fever, have found in the quiet and cheerful wards of the hospital, and in the skilful attention of doctors and nurses, the aid they so sorely needed.

We wish the Medical Mission in its beneficent work a yet greater measure of usefulness in these new and commodious buildings.

## DAILY TABLES OF TEMPERATURE AND RAINFALL FOR 1891.

THE tables on the succeeding pages are the records of observations made in the L. M. S. College grounds at Fàravohitra, the northern suburb of Antananarivo, at 4700 ft. above the sea. The first column shows the rainfall for the 24 hours previous to 8 a.m. of the morning of the day, while the second column (*minimum*) shows the starting or lowest point of the thermometer before sunrise, and the third the average for five years. The fourth column shows the highest point reached during the day, and the fifth the average for five years.

The lowest point touched was 40° on the 19th of June and 4th of August, and the highest was 84° on Dec. 7th and 24th.

The highest for the night was 62° on February 11th and 14th, and the lowest for the day was 53° on the 2nd of August. The 13th of March was a remarkable record, there being only 3° between lowest and highest point (58°—61°).

The rainfall has been the smallest for eleven years, being only 40.96in. Three months, February, March, and October were above the average of the eleven years, the rest were all below, especially January and November, the latter being seven times lower than the average, there being considerably less than one inch, while the month preceding had the heaviest fall for the eleven years.

The register for eleven years is as follows :

1881=42.12.in. ; 1882=41.08.in. ; 1883=57.65.in. ; 1884=68.86.in. ; 1885=52.19.in. ;  
1886=47.28 " ; 1887=65.08 " ; 1888=53.84 " ; 1889=49.61 " ; 1890=52.71 " ;  
1891=40.06. Average for eleven years=51.91.

J. RICHARDSON,

# DAILY TABLES OF TEMPERATURE AND RAINFALL FOR 1891.

JANUARY.						FEBRUARY.						MARCH.					
Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.
1		56	61	78	77	1	.25	61	63.2	81	78.2	1		55	60.2	73	75.4
2	.19	58	61	78	74.4	2	.07	59	62.6	80	77.8	2		58	61.2	70	74.8
3		58	59.8	75	73	3	1.03	60	63	77	76.8	3		58	61	73	75.6
4		55	60.2	80	74.2	4		60	62.2	76	75.8	4		57	61.2	75	75
5	.14	59	60.4	78	73.8	5	.07	58	61.6	75	76	5	.44	59	61.8	72	75.4
6	.13	54	58.5	75	74.6	6		57	60.4	80	76.6	6	.19	58	59.5	78	75.4
7	.03	53	58.8	76	76	7	.06	61	61.4	76	77.4	7	2.57	57	58.8	72	74.6
8		56	61	77	74.4	8		60	61.4	79	77.6	8	.15	57	60	77	75.8
9		58	60.6	75	75.4	9	1.39	61	61	77	76.4	9	.43	59	60	75	74.8
10		57	60.8	72	75	10	.94	61	61.6	79	76.8	10	.08	60	60.6	74	74
11		57	61.2	70	73.2	11	.25	62	62.6	78	77.4	11	.38	59	60.4	75	75.2
12		55	60.4	72	73.2	12	.65	61	62.6	78	77.8	12	1.16	59	60	73	74
13		51	58.6	73	74.6	13	.17	61	62	79	77.4	13	.20	58	60	61	70.8
14		57	60.2	75	74.4	14	1.05	62	63	76	77.2	14	1.35	58	60.6	65	70.4
15	.02	57	60.6	75	74.6	15	2.09	57	61.4	70	75.6	15	.82	58	60.2	72	75.2
16	.15	56	60.8	73	74	16	.07	56	60	72	75.6	16	.31	58	58.4	68	70.8
17		57	60	74	74.4	17		56	60.4	74	76	17		57	59.2	70	71.4
18		58	61	73	74	18		59	60.8	73	76.4	18		55	58.8	66	72.4
19		58	62	75	74.8	19		56	60.6	75	77.2	19		56	57.8	69	73
20		57	61.8	74	75.2	20		60	61	76	75.2	20		58	60.2	71	75
21		57	61	72	74.6	21		56	60.4	74	76	21	.10	58	60.2	70	75
22	.02	58	61.6	70	75.6	22		58	61	75	74.8	22	.02	55	60.4	69	73.6
23	.37	58	63.2	63	76	23		61	61.2	77	74.8	23		58	59.6	70	71.4
24	.13	58	63.2	75	76.4	24		61	62.2	75	74.8	24	1.26	57	57.2	73	70.2
25	.24	56	61.6	76	77.2	25		58	60.4	73	74.2	25	.03	58	57.6	73	70.8
26	.25	60	63	74	76.6	26		59	61.2	77	75.4	26	.19	58	58.6	70	72.2
27	.43	59	62.6	73(2)	75.2	27	.02	61	61.4	75	75.4	27	1.42	57	58.8	70	72.6
28	.17	59	62.6	73	76.4	28		57	61	70	74.6	28		55.5	58.9	68	72.6
29	.75	58	62.4	75	73.8							29		56	59.6	66	71.8
30	.16	60	62.6	76	76							30		55	58.8	68	71.8
31	.17	62	63	80	77.2							31		52	57.6	66	69.8

Oct.: 3.35in. Aver. 11yrs. 11.ogin. 8.11in. Aver. 11yrs. 8.904in. 11.12in. Aver. 11yrs. 8.08in.

APRIL.						MAY.						JUNE.					
Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.
1		55	57.8	68	70.6	1		49	54.4	66	67.8	1		48	50.4	62	63.8
2		57	59	71	72.2	2	.06	54	56	64	66.8	2		50	49.6	62	63.2
3	.01	59	58.4	72	72.6	3		54	54.6	63	65.6	3		50	48	62	62.6
4		57	57.6	70	72	4		51	53	62	65.8	4		50	49	63	62.6
5		59	58	68	70.4	5		52	53.8	63	67.4	5		50	49.6	64	63.6
6		57	59	66	71.6	6		49	53.2	64	67	6		46	49	61	62.8
7		55	58.8	66	71.2	7		49	53.8	65	67.2	7		48	47.6	62	61.8
8		55	58.6	67	69	8		52	52.8	67	67.6	8		49	46	61	61
9		55	57.4	69	70	9		55	54.8	68	68.4	9		46	46.2	64	62
10	.02	57	57.6	68	69.6	10		54	54.2	69	68.6	10		50	48.2	62	62.6
11		57	57.8	68	69.2	11		56	54.4	70	67	11		50	49.4	61	62
12	.29	57	57.8	66	68.6	12		54	51.6	68	65.8	12		49	45.4	61	59.8
13	.02	57	57.2	68	68.8	13		56	53.4	67	65.4	13		50	48.2	63	60.2
14	.02	58	57.2	69	69.4	14		57	54	66	65.8	14		48	47	60	59.2
15	.06	58	57.6	71	70.4	15		50	52.8	67	66	15		47	46.6	61	58.2
16	.22	59	57.6	72	69.8	16		50	53	61	65.2	16		51	44	61	60.6
17		57	57.2	71	70	17	.02	48	52.4	61	65.4	17	.01	50	46.2	60	61.8
18		55	56.6	69	68.8	18		50	52.4	61	65.4	18	.01	44	46.2	59	60.8
19		58	56.8	69	68	19		48	52.2	61	65.8	19		40	44.6	60	60
20		57	56.2	69	67.4	20		52	52.6	61	65.8	20	.01	44	45.4	61	60
21		58	56	70	69.4	21		49	51.8	65	67.2	21		44	47	59	61.2
22	.23	56	56	68	68.2	22		49	51.6	61	64.6	22		44	46.6	60	62.2
23	.06	54	56.4	70	68.8	23		48	51	61	64	23		44	47.8	60	61.8
24		56	56.8	67	68.6	24		44	50	60	64.4	24		51	49.6	61	62.6
25		54	54.8	65	68.4	25		45	49	61	64.2	25		48	49	63	61.8
26		50	54.2	63	68.4	26		47	49.2	60	64.4	26	.03	52	48.6	63	60.6
27		54	55.4	66	69.2	27		47	49.8	61	65	27		47	48.4	60	60.2
28		52	54.6	63	68.8	28		46	49.4	60	62.8	28		49	48.4	60	58.5
29		54	54.4	63	67.2	29		47	50.2	60	63.8	29		47	48	61	59.6
30		48	53.2	63	66.6	30		47	50.4	60	63.2	30		44	46.2	60	59.6
31						31		47	49.6	60	63.8						

Oct.: .97in. Aver. 11yrs. 1.9oin. .08in. Aver. 11yrs. .625in. .06in. Aver. 11yrs. .31in.

# DAILY TABLES OF TEMPERATURE AND RAINFALL FOR 1891.

JULY.						AUGUST.						SEPTEMBER.					
Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.
1		46	48.4	61	60	1		44	44.8	59	60	1		45	47.8	59	63.4
2		49	49.4	63	60.2	2		42	45.2	53	59.6	2		48	49.2	64	65.4
3		45	47.4	61	59.8	3		42	45.2	56	60.4	3		50	49	61	63.6
4		48	48.2	60	61.2	4		40	45.6	57	61	4		46	47.6	61	62.1
5		48	49.4	62	62.6	5		44	46.4	57	60.8	5		47	49	62	64
6		45	49	60	60	6		43	46.6	59	60.8	6	.01	50	50.2	63	63.8
7		44	47.6	57	60	7		46	47.6	57	59.6	7		47	46.8	66	65
8		44	46.8	58	60	8		43	45.8	56	59.6	8		54	48.6	67	65
9	.03	44	46.2	57	60.6	9		43	46	58	59.2	9	.13	52	49.8	67	66.8
10		47	47.8	59	60	10		43	45.8	56	59	10		47	49	63	65.2
11		41	47.4	57	60.8	11		45	45	58	59	11		51	51.2	66	66.4
12		46	47.8	58	61	12		41	44.6	61	58.4	12		51	51.6	65	66
13		44	48	57	60.8	13		48	48	62	60.2	13		52	50.6	65	65.2
14		45	46.6	59	61.6	14		42	46.6	60	60.6	14		48	48.6	65	65.4
15		45	47	58	62	15		43	48.6	60	62	15		49	49.36	68	67
16		43	47.6	56	60.8	16		42	46	62	62.4	16		52	49.8	65	66
17	.06	51	48.8	60	62.6	17		45	48.6	63	62.6	17		49	47.8	65	64.6
18		49	49	60	62	18		48	48.6	63	63.4	18		46	46.8	65	64.2
19	.03	50	48.2	57	61.2	19		46	45.6	59	62.4	19		50	47.8	66	66.8
20		45	46.6	58	61	20		44	45.8	61	63.6	20		44	47.4	64	65.8
21		48	47	59	61.2	21		46	48.6	61	61.6	21		46	48.2	63	66.2
22		46	48	55	58.8	22		49	48.8	60	61	22		50	50.6	65	67.6
23		44	48	61	61.4	23	.02	47	47	60	59.6	23		46	50	66	67.6
24		50	47.8	61	60.4	24	.04	47	47.8	60	61	24		50	52	66	69.8
25		43	46.6	57	59.6	25		48	47.2	61	62.8	25		49	51.4	69	69.8
26		42	46	58	60.2	26		49	48.4	62	63.8	26		50	51	72	70.4
27		43	45.4	55	60.4	27		48	49.4	64	65.6	27		55	53.8	75	72
28		44	46.4	57	60	28		47	50.8	69	66	28		56	53.6	76	71.6
29		42	46.2	59	59.8	29		48	49.6	68	65.8	29		57	54.4	73	71.8
30		46	46.6	60	60.6	30		50	49.8	64	64.4	30		54	55	67	71.6
31		43	45.6	59	60.8	31		50	49	62	64.2	31					

Tot. : .12in. Aver. 11yrs. .178in. .06in. Aver. 11yrs. .173in. .15in. Aver. 11yrs. .78in.

OCTOBER.						NOVEMBER.						DECEMBER.					
Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.	Date.	Rain.	Min.	Aver. 5 yrs.	Max.	Aver. 5 yrs.
1	.01	54	54.8	69	71.4	1		53	56	69	74.2	1	.24	56	57.4	79	75
2	.03	52	54.4	68	73	2		53	55.6	70	74	2	.19	59	58.8	76	74.8
3		49	53.2	72	69.6	3		53	56.2	72	76.6	3		57	57.2	79	76
4		54	52.4	72	68	4		57	57.4	78	76.6	4		56	57.6	77	76.4
5	.57	54	52	73	70	5	.22	55	56.4	73	76.8	5		57	58	77	77
6	.62	54	52.4	68	67.6	6		52	55.8	70	76.2	6		55	57.6	77	76.8
7	.24	52	51.6	72	68	7		53	55.4	70	75.4	7		57	58.4	84	78.6
8	.81	58	52.6	71	70.4	8		54	57.4	72	75.4	8	.82	59	57.8	76	75.4
9	1.17	53	53	72	72.4	9		57	58	78	75.4	9	.93	58	58.2	76	77.4
10	1.16	51	52.4	67	67.8	10	.01	57	55.8	79	73.4	10		56	59	76	78.2
11		55	54.4	67	70	11	.02	58	56.2	70	72.6	11	.39	60	58.8	82	79.4
12		49	52.8	68	69	12		54	55.6	67	72.6	12	.18	59	60.2	75	76
13		52	54	67	69.6	13		48	54	65	72	13	.34	56	56.8	71	76.6
14		47	53.2	70	72.2	14		47	54.4	66	74.8	14	.05	54	56.6	72	76.2
15		54	56.2	74	75.6	15		47	56	70	74.2	15		55	59	74	77.6
16	.55	53	55.8	72	74.6	16		52	56.8	79	78.4	16		58	58.4	74	77.6
17	.07	53	56	67	69.6	17		58	58	80	75.4	17	1.12	58	59.6	69	75.2
18	.03	50	53.4	63	67.6	18		56	59	74	77	18		57	59.6	78	76.6
19		50	54.8	71	68	19		55	56.6	74	77.2	19		59	58.8	79	74.8
20		55	53.4	74	72.8	20		54	57	75	76.4	20	.02	61	59	74	74.6
21	.02	55	54.8	73	73	21		55	56.4	75	75.2	21	.05	59	58.4	81	76.8
22		54	53.4	71	71	22		61(?)	57.8	82	76.8	22		59	57.6	83	72.6
23		54	56.6	68	71.6	23	.37	58	57.8	76	75.8	23		61	57.4	80	75.4
24		52	53.8	72	72.4	24		57	57.2	75	75	24	.07	61	58.8	84	76
25		54	53.8	77	72.8	25		57	57	72	73.4	25	1.26	61	59	81	75.8
26		58	56.2	79	75.4	26		54	77.4	80	75	26		58	59.4	80	78.2
27		59	57	77	75.8	27	.15	59	57.8	82	76	27		61	60.6	81	78.6
28	1.96	60	56	82	75.2	28		59	57.6	82	74.2	28	.22	59	60.4	78	77.8
29	2.22	56	55.6	77	74	29	.02	55	57.2	73	76.4	29	.49	59	58.8	79	76
30	.25	58	54.6	73	73	30	.04	55	57.8	80	76.8	30		60	59	80	77
31	1.13	55	54.6	70	73.4	31						31	.38	61	59.4	82	78.8

Tot. : 9.06in. Aver. 11yrs. 3.6in. .83in. Aver. 11yrs. 5.875in. Aver. 11yrs. 10.386.



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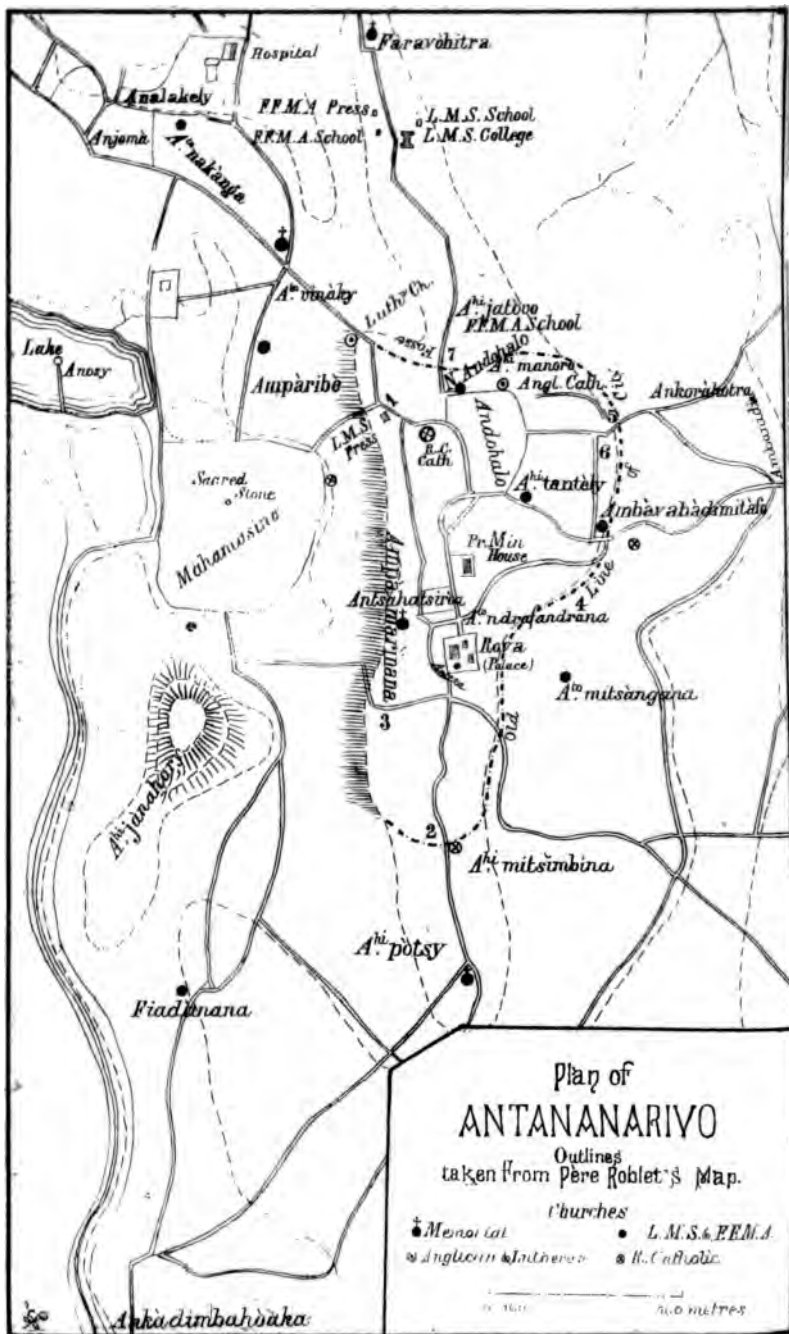
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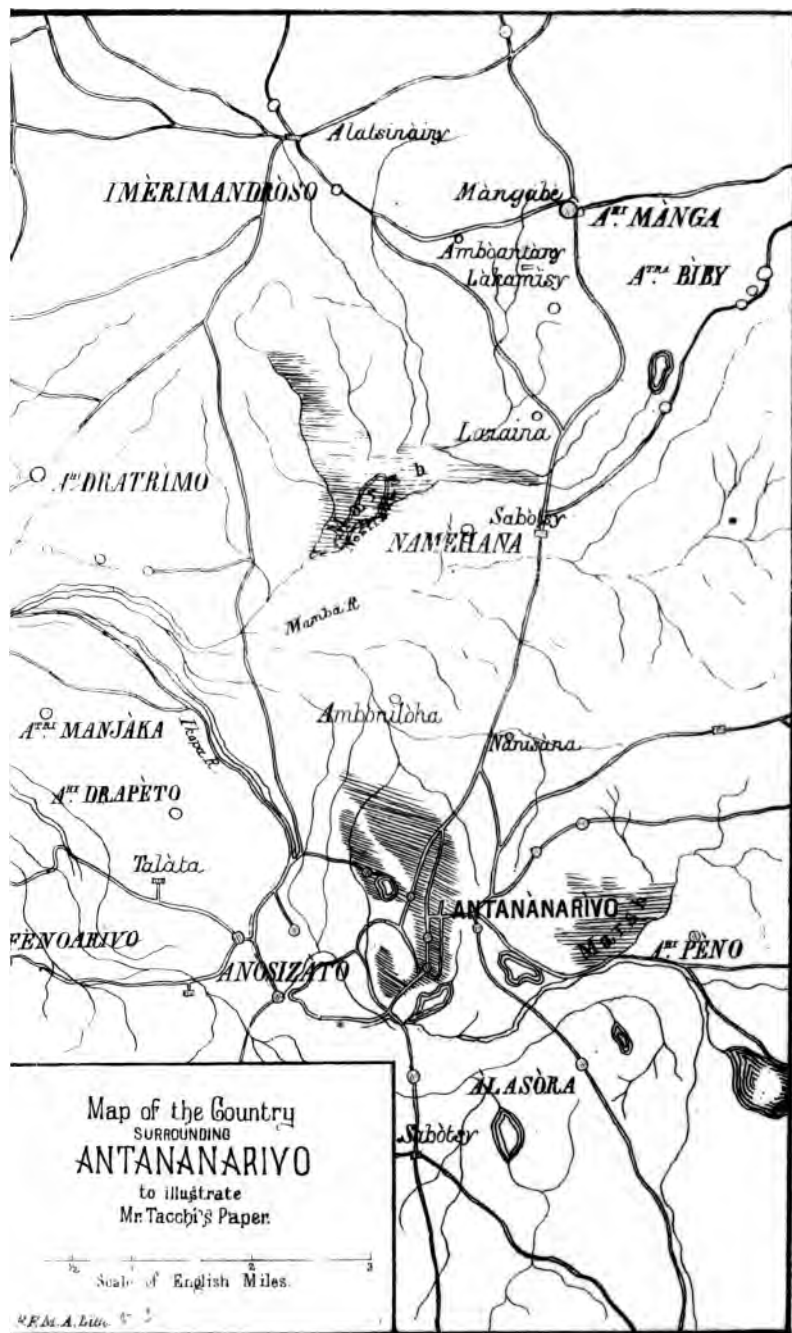
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THE  
ANTANANARIVO ANNUAL  
THE  
MADAGASCAR MAGAZINE.

*RECORD OF INFORMATION ON THE TOPOGRAPHY AND NATURAL PRODUCTIONS  
OF MADAGASCAR, AND THE CUSTOMS, TRADITIONS, LANGUAGE,  
AND RELIGIOUS BELIEFS OF ITS PEOPLE.*



EDITED BY THE  
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*Missionaries of the L.M.S.*



*No. XVI.—CHRISTMAS, 1892.*

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THE  
ANTANANARIVO ANNUAL  
AND  
MADAGASCAR MAGAZINE.

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THE SAKALAVA AND THEIR CUSTOMS.

THE inhabitants of Madagascar may be considered according to the localities they occupy, as there are probably three distinct races, which inhabit different parts of the island, and between whom there are many more points of difference than of similarity.\* They are easily distinguished by their features, colour, hair, and physique, but the difference is perhaps more marked in such slowly changing customs as those connected with the disposal of their dead, the forms of graves, and household observances.

On the east coast there is a race nearly black, with close woolly hair, and lazy improvident habits, who bury their dead in rude coffins of wood, which are put on low stands, with no attempts at what we should call tombs, except perhaps a kind of shed with which the head-men are honoured; these people, although they themselves would stoutly object to the name, I think must be termed negroes;† if they are an improvement on the African negro, that is probably to be accounted for by their environment, and their long contact with Europeans and with the superior race (the Hova) which governs them.

On the central plateau of Madagascar quite a different race is met with, distinguished by their light brown colour, long straight hair, smaller build, and intelligent faces; these make very elaborate family tombs of stone, and bury their dead in silk shawls (*lamba*) instead of coffins; this race is probably a branch of the Malayan family. These people, although they

\* See, however, arguments for the substantial unity of the Madagascar races, in ANNUAL V., pp. 16, 17, *et seq.*—EDS.

† Much more probably Negrito or Melanesian.—EDS.

are smaller in numbers and weaker in physique than the natives, have by their superior intelligence and power combination raised themselves far beyond any other tribe in the country; they are thrifty too, which quality is sadly wanting in the others, so that, although they live in the most inaccessible and barren part of the island, they are much better off. This is the Hova race, whose queen, Rànavàlona III, is acknowledged as Queen of Madagascar by almost all the various races inhabiting the country.

On the west coast again, the difference of race is even more strongly marked, at least at first sight, owing to the wild look of the Sakalava as compared with the other natives; here we have a copper-coloured race of fine physique, with long frizzy hair, and of proud and fierce temper, who are as far removed from civilisation as the other tribes are eager to assimilate it.

Except so far as the Hova are brought in contact with other races through the governorships established all along the east coast and in a few isolated places on the west, there is not much intercourse between these tribes, and as a rule they do not intermarry. There is also a great belt of uninhabited country, comprising a large part of the island, and that the most healthy and beautiful part, which cuts off the coast tribes from the central plateau; on the east side this belt is mostly covered with dense forest, but on the west it is prairie land with a belt of forest near the coast. In the last year's ANNUAL I described a journey across this uninhabited part, and gave particulars about the Sakalava to be found on the western side of it; in this paper I will try to describe the Sakalava as they are to be seen on the coast and at the court of one of their most powerful kings.

The Sakalava live all along the west coast of Madagascar and extend from thirty to forty miles inland, their settlements being mostly at the mouths of the rivers and along their banks. The rivers are numerous, and some are large, and there is a considerable population, probably not less than a million and a half, if we include their slaves. They are probably a race of the Zulu type, having nothing of the negro about them. There are, however, two great divisions, the Sakalava on the coast, called Vezo, and those inland, who are called Masiakoro. The Vezo, who live along the sea-shore, are a mixed race and are much tamer than the pure-blooded Sakalava, and also far less interesting. They are excellent boatmen and in their canoes venture out to sea and catch turtle on the islands and sandbanks in the Mozambique Channel. They spend all their time in fishing and sailing up and down the coast; they have no plantations, nor do they usually possess cattle, but exchange

fish for rice and Indian-corn. The canoes which they use are very different from the ordinary round-bottomed Malagasy ones, being very deep and pointed at the keel; they are made of very soft wood and spliced in numerous places, in fact, the only piece is the only solid part of them. I counted as many as thirteen different pieces of wood in one I travelled in lately; they are pegged together with strong iron-wood pegs and have a piece of hard wood running round the top, under which seats are fixed. They are generally about two feet wide, three deep and from ten to fifteen feet long; the head is very pointed and cut into a curious shape, with a projecting prow something like the beak of a bird. The large square sail, which is arranged on two poles, takes them along at a great rate with a fair wind. To prevent them from rolling over they have an outrigger made of a solid piece of wood fixed alongside about four feet from the canoe; if the wind drops, they can be paddled, but the Vezo are very clever in judging about the wind, which is very regular in the Channel, and, as a rule, the water is as smooth as a lake.

Besides the canoes the only other interesting thing among the Vezo is the carving on their graves; these coast-dwelling tribes bury their dead in the sand and generally erect a fence round the grave, the posts and top bars of which they carve in a most elaborate way with figures of men, women, birds, water-pots, small houses, canoes, bottles, crocodiles, guns, and other things. On a man's tomb you find figures of women, intended no doubt to represent his wives; while on a woman's tomb the figure of a man occupies the central position. The figures of the birds are the most interesting, and some of them are good representations; the flamingo, parrot and guinea-fowl are most usually shown, often being put in couples beak to beak. Some of these carvings show considerable skill, while others are rude and grotesque. Wooden figures of children are to be seen among the charms on the necks of most Sakalava women, and wooden idols are set up under the sacred wood which is erected by the medicine-men before the platform on which sick folk are placed. In other parts of Madagascar we find carving on stone, but I am not aware that carving in wood is practised to any extent among the other tribes.\*

The Sakalava further inland are great warriors and are always armed, generally with a flint-lock musket, which they keep very bright and always loaded with a couple of slugs; they also carry spears, which they call "the wives of the gun." They are not wanting in courage and prefer to die fighting

\* See, however, ANNUAL II., pp. 193-199, for information about the wood carvings of the Betsileo tribe.—EDS.

than in any other way, but they are so full of superstition and fear of charms that directly one or two of a party are killed they generally give up the fight, not from fear of the enemy, as they will certainly return and fight them again, but because they think the gods are against them. They rarely, however, come into open conflict, always preferring to surprise those whom they wish to attack, whether enemies or travellers; and in their marauding expeditions on the borderland they surround a village during the night and lie hidden until the morning, when the cattle are driven out to grass. They then surprise the people and carry off as many captives as they can secure, together with the cattle. These raids are carried out in perfect order, the captives being lashed together and put in the centre of the attacking force, and are made to carry on their heads whatever plunder the Sakalava may have found. The cattle are driven ahead by the younger men, while the elder men and the more skilled marksmen bring up the rear and engage the pursuers, generally keeping them at bay, though they may be greatly outnumbered. I heard a Sakalava say that a party of eleven of them kept three hundred Hova soldiers in check until their party had got away, and I have no doubt it was so, as they are very much feared.

The pure-blooded Sakalava have much of the North American Indian's pride; they think themselves quite the equals of Europeans and treat all foreigners accordingly. They think it beneath them to show gratitude or to thank you for anything; and if you ask a Sakalava if he would like such and such a thing, he will answer, "Should I hate it?" Their selfishness and pride is as irritating as the good manners and politeness of the Hova are pleasing. The Sakalava very rarely show surprise, and it is difficult to see any emotion in their faces, however astonished or pleased they may really be. The following account of themselves told by one of them will show their way of looking at such matters. The origin of the Sakalava and the white men, he said, was thus: the sun had two wives; by the first wife (i.e. first in rank) he had a dark son (a Sakalava), who was of course heir to all things; by the second wife he had a white son, which pleased him very much, but as the white son was only from the second wife, he could not be endowed with the paternal possessions, which grieved the father; however, to make up for this, he endowed the white son with knowledge. As the elder son and his posterity possessed so much, they grew lazy, but the younger son and his children got more and more clever, until in time they got most of the possessions too. Hence the Sakalava are the elder, and the white men the younger brothers. The latter part of this story amused me too much to allow me to forget it easily. Probably the Sakalava of the coast have been

in contact with Europeans longer even than the natives on the east coast, as vessels used constantly to call for water, etc., on this coast, and it was a well-known stronghold for pirates; yet, so far, that contact has had no civilising effect on the Sakalava, and they are far behind the natives on the east coast, indeed they are quite uncivilised. They have a liking for gunpowder, cotton cloth, and gold coins, and even in the most remote parts one may see English sovereigns and half-sovereigns strung on the necklaces of Sakalava women and in their hair; these are relics of many of the unfortunate Europeans who have at different times found their way to the west coast of Madagascar and lived amongst the Vezo; so much are these gold coins sought after that they have even come to be considered sacred charms, the white man's idol!

The Sakalava seem removed one step only from the nomad stage, though they have not got so far as to build towns, except where their kings and some of their greater chiefs live; but they often move, and always after a death shift their huts, though often only for a few yards' distance. This, however, is a good thing for them, as their dwellings are most simple structures, made only of a few posts, reeds, and bamboo, and are very small and low. Though their country is most fertile, and when cultivated always yields two and even three crops of rice in the year, while manioc grows to an immense size and looks like a jungle, yet, owing to their lazy habits, the Sakalava are often without food, and are thus reduced to great straits. They then live on the *oviàla* (forest yam), the tuber of a species of *Dioscorea*, and wild arrowroot, which grows largely in their country. I spoke to a chief who is more intelligent than the rest about the stupidity of such ways, and he answered, "We Sakalava do not like spades; we only care for guns, and it takes about a month to keep off the *fòdy* (cardinal-birds) from the rice, which often only lasts us three weeks." This is more or less true, since most of them cultivate only a few square yards of rice plantation, upon which these small birds flock down in great numbers.

Like most uncivilised races, the Sakalava make the women do the work, while the men drink, hunt and plunder; but the rum used on the west coast is not the deadly fire-water from abroad, as on the east coast; the Sakalava make their own rum from various things, such as sugar-cane, bananas, and the fruit of a kind of fan-palm, and although it is intoxicating, its after effects are not so bad as from the traders' rum; and since the laziness of the Sakalava prevents great quantities being made, instead of a chronic state of drunkenness, as among the east coast tribes, here they have drinking bouts about once a week, when the rum is ready. It has become a

custom for the kings and chiefs to commence all their meetings and business with rum drinking, and no one is seen by the king or chief unless he first presents a quantity of rum; probably the only exception to this rule was at our own reception. When the Sakalava do exert themselves and shake off this laziness, they can get over an astonishing amount of ground, and seem to care nothing for hardship. In their hunting and marauding expeditions, for instance, a band of men will start off with only a few dried manioc roots and sweet-potatoes strung on their spears, and travel over a hundred miles to the borders of other tribes, and after raiding there make their way back. On the way they hunt the wild cattle which are found in numbers in the open country, and if this is not successful, they catch eels in the small streams by damming them or turning their courses. As many as thirteen eels were taken one afternoon in way this by a party with me at the head of the Nàpy river in the Bôngolàva hills.

X. The Sakalava have great respect for authority and consider their kings to be sacred. There are a good many petty kings and two or three more powerful ones; most of these, if pressed, acknowledge the Queen of Madagascar to be their "mother," but some consider her as their "sister," that is, their equal. In their own country, however, they are supreme and, as a rule, glad of any excuse for plundering on the borderland. A kind of feudal system obtains among the Sakalava, the king's power depending on the balancing of the chiefs one against another. These chiefs appoint other inferior ones over their dependents, but after all much depends on the people themselves, as they leave a chief who is oppressive and go over to another, who becomes stronger in proportion to the number of men under him. The king's person being sacred, no Sakalava would venture to kill one; after death the relics of the kings are worshipped. These consist of the teeth and nails, etc., which are kept in crocodiles' teeth (extracted from a living crocodile, which is then liberated), and are consulted by the reigning king; they are held in such high veneration by the Sakalava that if a member of the royal family secures the *dady* or *jiny*, as these relics are called, the greater number of the people will follow and support him, though he may not be the rightful heir. These relics are kept in a house next to the king's in the royal compound. The name of the late king is never mentioned, nor is any native word used in which his name or part of his name occurs; the day of the week on which he died is kept as sacred as is Sunday in a Christian country, and the medicine-man who has charge of these relics ranks with the greatest chiefs. All the Sakalava kings are said to be of one family and to have had one common ancestor; and there is a certain amount of

combination among them, though their subjects attack and steal each other and do as much cattle-lifting in their own country as on the borders of the other tribes.

When a Sakalava is adorned <sup>a</sup>I cannot say dressed, as there is not a great amount of clothing about them, except those seen on the coast—he looks formidable enough; from a large leathern belt ornamented with brass and jingling chains hangs a huge powder-horn, his shoulders and neck are pretty well covered with charms and beads, and on the arms are smaller horns prettily worked round with beads. These contain bits of sacred wood, bone and other things stuck into a filthy mixture of grease, which is very unsavoury, but is supposed to be a very powerful charm. The hair is done up in great balls, in which suet is freely used, and other charms, such as crocodiles' teeth and agate beads, are tied amongst the hair. The men do not often paint their faces except when sick, but the women adorn their faces with yellow, white and red, or a mixture of colours, pretty early in the day; it is easily washed off, but they think it very fine, and it certainly looks very funny, especially when they have on their ear ornaments, which are large and necessitate the splitting the lobe of the ear. The Sakalava on the coast are not given to painting themselves quite so much as those further inland.

Money is as yet not understood by them; cotton cloth, especially blue cloth, beads, basins, brass buttons, and iron pots take the place of money; but red coral for necklaces is the most useful thing to carry for barter, as it is always in request. Silver coins are liked, but then you must have a drill handy to pierce holes in them for necklaces. Most of the trade, such as it is, is in the hands of Swahili Arabs and Hindi, who are found all along the coast. They get in exchange for their powder and other goods, rubber, ebony and sandal-wood; they do a fair trade too by watching the wants of the Sakalava and taking Indian-corn and rice to parts of the country where there is a scarcity of food, and this is always the case in different places once or twice a year. When forced by hunger, the Sakalava take the trouble to seek the india-rubber vine which grows in all their forests, and they cut down the ebony which is found there. No doubt in time European traders will take up this trade, but at present there is no security for merchandise in the Sakalava country. The primary object of these half-breed Arabs is no doubt the slave-trade.

The Sakalava are polygamists; the greatest number of wives of one husband that I have seen is thirteen, and I have heard of a chief who has over thirty, but two or three are the ordinary number. Many of these women are African slaves, and some are Hova and Betsileo from the interior, who are eagerly

sought after by the cattle-lifters. The lot of a civilised girl, who is possibly also a Christian, among the Sakalava is a very sad one. Formerly, the greater part of the slave-trade consisted in bringing into the country Makoa slaves from Africa, but since the signing of our English treaty with the native Government releasing foreign slaves, this trade does not pay, though occasionally dhows with slaves come to Maintirano and the Manambolo river, and to Baly further up the coast; but unfortunately the slave-trade has another side not so easily stopped, but which is quite as sad as the African slave-trade. Every year a great many women and children from other tribes are stolen by the Sakalava, and no doubt many of them are taken out of the country; over 800 were taken from the Vakinankaratra district alone last year, part of these no doubt are kept by the Sakalava, but probably the Arab traders to be found at the courts of all the Sakalava kings could account for many of them. I have found that all these traders have a number of wives in different places, and I have no doubt that by this plan they take these unfortunates about with them. They do not, however, allow a European to see much of their movements, but I expect if this could be followed up, we should find that there is a pretty brisk trade going on in this way; the very fact that these women are much sought after proves this.

I have had conversations with a good many of these unfortunate victims of the Arabs, both African and Malagasy. One African who is now free told us how, when the dhow they were on was becalmed near the Madagascar coast and a man-of-war boat was in chase, the Arabs called up the strongest of the slaves to row the dhow, and to make them work harder told them that those in pursuit were cannibals, and were only chasing them to catch them for food; "and we worked harder and harder," he said, "till the dhow grounded, and then ran off into the woods out of the way of the Europeans, and were caught again by the Arabs and sold to the Sakalava." Another African, who had been shipped at Muscat, told us how most of the women with young children dependent upon them died of thirst on the voyage, as many as three and five a day, and when they begged water of the Arab crew, were answered, "You have no father and mother here." But the account of an old lady of high class stolen from the Hova country by the Sakalava was equally sad; she told us her husband had been disabled and her son-in-law killed in the raid on their village, and she with her nine children was taken off; some of her little ones were still with her, but she told us, with tears in her eyes, that the bigger girls had all been sent to the coast, and she would never see them again.



Besides the worship of the relics of their kings, the Sakalava worship their ancestors, and when they are very short of food, they may be seen offering rice, milk and rum upon miniature erections under the sacred *kily* (tamarind) trees; and the women crying and tearing their hair are considered to be possessed by the spirits of the ancestors. There are innumerable charms and sacred spots which are all more feared than loved. Superstition has destroyed almost all their courage, and it is sad to see such a fine race so utterly degraded; it enters into every thing with which they have to do, and so strong is it that, though they have the greatest desire for children, they do not hesitate to discard a child born at an unlucky time, and the father literally throws the child away in some forest path, to be picked up by some passer-by, or to perish; and to prevent it from being saved, and thus bringing misfortune on the family, as the medicine-man says, the father, I hear, sometimes buries the child and then drives a stake into the grave. A person in a fainting fit also is supposed to have been called by the ancestors and is buried alive; and if the unlucky individual should recover in time and get free, he is not allowed to return, but is driven off into the woods.

One of the most curious customs connected with their witchcraft and ways of doctoring sick folk is that of placing the sick person on a high platform called a *bilô*, raised some twelve or fifteen feet above the ground on four stout poles and approached by ladders. The medicine-man erects an image roughly carved in wood before the platform, the friends collecting in numbers, and drinking and dancing round below. All this is kept up for days and is, I presume, meant "to drive the sick devil" out of the sick person. This rough treatment is resorted to only when the medicine-man is pretty sure of the recovery of his patient, as, in case of his death, the medicine-man stands a chance of being blamed for having brought evil on him. This happened in one case that I know of; a chief's brother called Solifa was being treated in this way, and as the poor fellow was suffering from pneumonia, he died, as was to be expected, and Tsivatoa the medicine-man was killed accordingly by Solifa's friends. Only the most daring and cunning venture to practise "medicine" among the Sakalava, but they make it pay while it lasts.

Probably there are few countries in this part of the world so fertile and so capable of development as the west side of Madagascar, but the Sakalava are a most difficult race to manage, and in their present state they form a great drawback to the progress of the island.

E. O. McMAHON.

## NOTES ON A BOTANICAL TRIP IN MADAGASCAR.\*

I LANDED at Madagascar in December, and, after a few days at Tamatave, proceeded to Antananarivo. After a fortnight's stay in the Capital, I then started on my journey south-eastwards, and after six weeks' almost continuous travelling, I arrived at Fort Dauphin, the extreme south-eastern corner of the island. Most of this route is over well-known ground, and Messrs. Baron, Grandidier, Hildebrandt and others have very thoroughly described the character of the country. The first part of my journey was to Lake Itasy, which is about two days' journey west of the Capital. This district deserves notice, as the geological structure is peculiar. I passed over two rather extensive basalt flows, which appear to be of somewhat recent date, though the absence of any overlying rock render it impossible definitely to fix their age. On this basalt there is a distinct change in the vegetation. *Lysimachia parviflora* and a few other species are more common, and *Clematis anethifolia*, *Kniphofia pallidiflora*, and others appear almost confined to it. The whole district near Lake Itasy is volcanic; the country is studded with small cones of scoriæ, rising (in the neighbourhood of the lake) out of a level marshy plain, and one is tempted to assume that the lake lies in a hollow due to the subsidence of the land through volcanic action. From Lake Itasy I went to Mr. McMahon's station at Ramainandro, and near here I saw the celebrated subterranean river. It is a very simple formation. The strike of the strata is nearly east and west, and the river, running in the same direction, has burrowed its way underneath a harder layer of rock, which latter has subsequently broken off in large boulders and covered the stream.

I next passed through the Ankàratra Mountains, which rise to about 9,000 feet, and appear to be of rather a different rock to the ordinary monotonous gneiss and granite of Imèrina and the Bètsilèo provinces. These mountains are very misty, and never suffer, so far as I could see, from the drought prevalent over most of the country during the dry season.

Corresponding to this climatic change, there is a distinct change in the vegetation. The higher mountain plateaux and hillsides are covered with luxuriant grass, amongst which there is a profusion of flowers. Orchids—especially such forms as *Eulophia*, *Habenaria*, and *Satyrium*—are especially abundant. Gentians of various species are also common, and many kinds of *Stachys* and *Salvia* also grow in this part.

The ravines of these mountains are often filled with patches of forest, and it is interesting to see how these woods are strictly confined to the more sheltered places. The trees along the outside edge of a ravine, and which are therefore exposed to the wind and sun, show a stunted and branched condition. This exposure to wind and drought explains the

\* By the kind permission of Mr. G. F. Scott Elliot we are enabled to reproduce two papers contributed by him to English and Scottish scientific journals. Although they somewhat traverse the same ground, they will be seen to have independent interest and value; the first is extracted from *Proceedings of the Royal Geographical Society*, Mar. 1891, pp. 158-163; the second from *The Transactions and Journal of Proceedings of the Dumfriesshire and Galloway Natural History and Antiquarian Society*, 1899, pp. 236-340.—EDS.

absence of trees over the parched, steppe-like plains of Imerina, where all the vegetation consists of very small shrubs with a prostrate, much-branched, wiry habit, more like heather than any other English plant.

The rest of my journey to Fianarantsoa, and south of that town to the border of the forest at Angalampona, lay over these low, broken, gneissose hills, intersected by numerous rivers and with green rice-fields lying in every valley. The plants become sometimes taller and more luxuriant by the riversides, and in the rice-grounds one finds many common weeds of cultivation, but the rest of the country is almost wholly covered by the indigenous forms, such as *Hypericum*, *Indigofera*, *Desmodium*, *Otiophora*, *Phayloopsis*, *Commelyna*, and many others.

There is an interesting mountain lying to the east of the road near Fianarantsoa. According to Malagasy tradition, its misty summit is inhabited by the ghosts of the dead. When the cannon are fired in the Capital at the feast of the new year, answering salvos of ghostly artillery are said to be heard from the mountain top. Mr. Shaw told me he had once managed almost to reach the summit, and he found the valleys had a peculiar bend and shape which might form an echo, so that this may really be a fact.

The most interesting part of my journey began at Angalampona, about fifty miles south of Fianarantsoa. This is the inner limit of the forest, and, as nearly as I could calculate, the mountains are at this place about 4000 feet high. There are two parallel ridges, running nearly north and south, and separated by a river of considerable breadth. The river seems a branch of the Mangoky, and apparently turns to flow westwards a few miles inland. After crossing the river, and a rather dangerous morass which covers about two miles of the road, one has the second mountain ridge to traverse. This is the watershed of the island, the rivers on its seaward side draining into the east coast, while those on the inland side eventually fall into the sea on the western coast. The whole of these mountain ridges and their valleys is covered with a well-grown and dense forest. It is difficult, in fact, to get a good idea of the country until one emerges on the eastern flanks of the second ridge. The view from this side is very beautiful. Below one's feet lies a long, very deep valley, with a broad river running eastwards. Little villages are placed on flanking spurs of the hills, while the mountain ranges to the westward, rising one behind another, are covered with forest. Every here and there an abrupt granite precipice appears amongst the trees. The level of the valley is 1000 feet below that of the river flowing west. The forest is here very narrow.

It took me only about six hours to cross from Angalampona to Ankitsika. The road, however, is indescribably bad, and it is seldom used, and broken by morasses, gullies, and irregular boulders. The forest is, however, very beautiful. There are numerous orchids and a very delicate *Streptocarpus* (*S. Hilsenbergii*), while *Plectranthi* and other flowers grow in great profusion. The extreme narrowness of the fever-stricken forest belt in this part may make in the far future this route an important one in proceeding to the interior.\* At present, however, it is one of the worst, as the tribes in this part are quite independent.

\* The forest takes about three days to cross by the ordinary Tamatave route, and is nowhere so narrow as here.

and almost always fighting. Their villages are also extremely miserable, and kept in an indescribable state of dirt.

The forest appears to have originally extended to the sea in this part, but the natives have burnt it almost all down in clearing the ground for rice. The whole of the country from this place, Ankitsika, to Vangaindrano, consists of gentle hills and valleys, with occasional marshy tracts, and is intersected by numerous rivers. These hills consist of gneiss and granite, outliers of the main north and south mountain chain; they are largely covered by a very scabrid grass, quite useless for cattle, and by the bracken fern. In the more marshy places great numbers of the Travellers'-tree (*Ravenala madagascariensis*) occur; and along the rivers, and in particularly sheltered valleys, one sometimes finds parts of the original forest remaining. The whole vegetation becomes utterly different when one has passed the forest, which is a thoroughly natural floral boundary. As one approaches Vangaindrano, the country becomes more open and the hills gradually become much lower, while large tracts of flat alluvial ground are more frequent. The population also becomes very much more numerous. Mahamanina, Ankarana, Betsiraha, etc., are all large towns and are garrisoned by the Hova.

Vangaindrano is a rather important place, and here the alluvium becomes of very large extent. The river at this town is a particularly fine one, and as broad as the Thames at Charing Cross. Unfortunately it is useless for ships, as there is the usual bar of sand at the mouth. However, it appears to have formed a large tract of fertile soil; probably there are not less than sixty square miles of good alluvial land. This is so unusual a fact in Madagascar that it is probable this place will at some time be of greater importance.

The next part of my journey was along the coast, and never more than fifteen miles from the sea. This district is entirely independent of Hova control, and one has to exercise the greatest possible care. The general features of the country are similar to those already mentioned, but besides the low hills and ridges springing from the inland ranges, and composed of gneissose and granitic soil, there are vast stretches of sandy dunes, broken by lagoons, rivers, and marshes. These are a continuation of the series occurring on the eastern coast further north, and are due to the same cause. The rivers are very fine. The Masiàna-ka, Isàndraviniàny, Màmambòndro, Màmambàto, and Mâtitanana are particularly fine streams, and none of them less than fifty yards across; and there are five other important rivers on the road. As one approaches Fort Dauphin the mountain range gradually trends nearer and nearer to the sea, until it is only about six miles from the coast; while at Vangaindrano it must be at least fifty miles inland. Fort Dauphin stands on a rocky promontory, and is surrounded by miles of sandy dunes. I passed twice over this route, as, after waiting three months at Fort Dauphin, I was obliged to go back by land to Ambàhy, where I obtained a passage to Mauritius. The itinerary on the second journey was—1st day, Manafiafia (St. Luce) (trader here); 2nd, Ambàniházo; 3rd, Isàma; 4th, Mánantèna (Ambàlahèrana); 5th, Isàndraviniàny (Ambàlafàndrana); 6th, Manambondro (trader's house at mouth); 7th, Masianaka; 8th, Bénanorémàna (trader). The villages mentioned on the map at Somfika,

Vôhibàrika, and Nôsy Colombal seem to have been abandoned, as far as I could gather from the natives.

It only remains to give a short account of the soil and vegetation of the country. The forest is in most places a very disappointing one. Thus, near Fort Dauphin, where I managed to get to know it fairly well, there is very little really good timber. The forest growing on the maritime sands is peculiarly poor. The trees are seldom more than thirty feet high, and are usually very bushy and of low diameter. One only sees really fine-grown trees in the deepest parts of the forest, particularly in valleys amongst the hills and in alluvial patches along the rivers. The amount of humus in the forest is, usually speaking, very small. In most parts the natives, after burning the forest, usually find that two or three years of rice-growing has exhausted the soil, and a fresh portion must then be cleared. The commercial value of the timber seemed to me to be of a very dubious nature. The wood will not float; and in the parts of which I could speak from personal knowledge, eight miles, at the very least, of haulage through sandy loose soil would have to be done for every piece of timber. Moreover, the extent of the supply has been enormously exaggerated.\* I should doubt if between Angalampona and Fort Dauphin there is as much good timber as exists in the Knysna forest of South Africa. The forest contains many species of *Weinmannia*, *Croton*, *Ficus*, *Homalium*, and *Coleus*. There are numerous *Dracenas* and *Pandanus*, and *Rubiaceæ* are very abundant. The beautiful orchid, *Angræcum superbum*, is fairly common on old stumps, and *Bulbophyllum*, *Eulophia*, *Habenaria*, and many other genera of the same family abound. *Acanthaceæ* are very numerous, both in species and individually. A common character of the trees lies in their leaves, which are usually hard, coriaceous, rolled at the edge, and often serrated. Very few are really deciduous.

The ordinary soil of the cleared parts of this district is a gneissose clay, coloured red by the decomposition of iron salts, and usually very much hardened and caked together on the surface by the sun's rays. This soil is distinctly poor for coffee, sugar, and tobacco, though the last can be grown upon it; so poor, in fact, that I could not see any prospect of successful plantation. It is covered by a large number of indigenous plants, almost all specifically distinct from those of the interior steppes of Imerina and the Betsileo. The plants are chiefly small heathery-leaved shrubs, with many orchids and gentians in the more marshy places.

A very large proportion of the coast is made up of the sandy dunes and flat, marshy, sand-alluvial patches mentioned above. The sand appears to be of a pure white maritime nature, and the worst possible for vegetation. In the south, about two days' journey from Fort Dauphin, there is a desert as dry and arid as Namaqualand, viz, the Antandrôy province. It is covered by *Opuntia*, and the natives are said to be confined to this plant for water during most of the year. The plants, from the few I obtained, were all peculiar forms found nowhere else.

Along the eastern coast this sand occupies long stretches of country. I connected its presence with the peculiar projecting points of the land at St. Luce and Fort Dauphin, and the presence of a strong coast

\* Have not the reports had reference to the north-east coast, however, where the supply of timber is certainly abundant?—EDS.

current, which during half the year flows southwards, and the rest of the year northwards. It is, I think, because of this current that none of these fine rivers are navigable. They are often completely blocked by a bar of sand for months, and there are always changing beds at the mouth. Possibly the interrupted reefs of coral may have an effect, but of this I cannot speak for certain. At any rate, I was often struck by the parallel between the southern part of Africa and that of Madagascar in several points. The Antandroy desert corresponds to Namaqualand. The forests correspond to the belts of the Knysna, Pondoland, and Natal, and the perverse nature of the rivers on the eastern coasts, commercially speaking, is exactly the same. The harbour at Fort Dauphin is open to north-east winds, but is otherwise fairly safe, and has only a single hidden rock. The others, St. Luce, Ambahy, etc., are really open roadsteads with a dangerous coast.

The people in this district are not very well known. The Antaisàka inhabit Vangaindrano and the neighbourhood, and their appearance is strikingly different from that of the rest of the Malagasy. They are short and rather thick set. Their features are more square and rather more prognathous, and their hair is more frizzy, though not woolly. They seemed to me to be very probably crossed with the original inhabitants dispossessed by the Malayo-Polynesian stock of which the Hova and Betsileo are the descendants. They are extraordinarily expert with the spear, which may account for their survival. They form a small tribe not extending far from Vangaindrano. The next strip is occupied by the Antaisàra. The King of Manambondrona has a nominal suzerainty over the whole district, and is said to have 5000 warriors under him, which would make a population of 30,000. They are utter savages, dressing in mats made of rushes, ignorant of money, and each little village is usually at war with its neighbours. The population is chiefly along the base of the mountains and in the valleys, where the soil is good enough for their cattle and rice-growing. The neighbourhood of Fort Dauphin is occupied by the Antanosy, who are in subjection to the Hova, and are in rather a miserable condition. Both these tribes (Antaisàra and Antanosy) are clearly of the same race as the Hova and Betsileo, but one very often meets individuals with a distinctly Arab cast of features. Charms written in degenerate Arabic are found amongst some of the tribes.

The general conclusion I drew from my journey was that, in this part at least, there was no probability that European colonisation could ever succeed. The traders along the coast manage to live in a very miserable way, and that is all. Vangaindrano is a possible exception, so here there might be a reasonable prospect of success. I found a large proportion of cosmopolite weeds of cultivation in the neighbourhood, which is a promising sign. Unfortunately, however, it is only the sandy and rocky parts, which are fairly healthy and free from fever. The insalubrity of the climate varies exactly with the amount of wet alluvium and moist humus, that is, with the fertility of the soil; and the wretched existence led by the few Creole traders on the coast leads one to hope that this country will be left entirely to the natives, who may in time become a civilised and Christian people.

G. F. SCOTT ELLIOT.

## THE FLORA AND FAUNA OF MADAGASCAR.

NOTHING would seem to be easier than for a botanist to describe the flora of a tropical island, but in reality nothing is so hard as to give an account of so strange and outlandish a vegetation.\* The flora of Madagascar contains probably 6000 or 7000 species, of which 10\* per cent. are endemic. Most of these special forms, moreover, are so strange and extraordinary that anything like a detailed description is impossible.† They are, in fact, vegetable kangaroos. I shall simply try to describe the vegetation, or rather the different vegetations, as one sees them. The island consists of an enormous mass of granitic mountains rising to a height of nearly 9,000 feet in isolated peaks, but usually forming an irregular tableland or mountainous plateau about 4000 feet above the sea level. The flanks of this tableland are covered with dense and luxuriant forest, which thus forms a belt all round the island and limits the bare upland plateaux of the centre. Between this forest and the sea is a rather wide stretch of sandy plains broken by lagoons, brackish and freshwater lakes, and intersected in all directions by deep and broad rivers.

The flora of this sandy littoral is very monotonous. There is usually a stretch of short turf, with *Phaseolus*, *Ipomœa Pes-capræ*, and other plants with long trailing runners rooting at intervals. Our English sandpiper is common along the shore, but the commonest creature is a small crab, of which myriads are always running up and down just outside the reach of the waves. It is a ferocious little animal, and snaps its extremely small claws whenever one approaches, while gradually sidling away into the water. There is in places very dense brushwood, formed chiefly by *Scaevola lobelia* and certain Rubiaceæ, and this is at times broken by clumps of *Casuarina* trees and *Pandanus*. The former is a favourite perching place for guinea-fowl, which are found in large numbers along the coast.

Every now and then one has to take to a canoe and travel up some sluggish river. The banks are fringed by groups of Travellers'-trees, as well as by Baobab and other trees which do not differ so much from our own forms in appearance. A gigantic Arum with leaves nearly four feet long is often seen in long rows along the margins. The beautiful blue water-lily and the yellow *Limnanthemum* rest on the surface of the water, and occasionally one finds the latticed leaves of the *Ouvirandra*, one of the curiosities of the island. The lovely little blue and red kingfisher may often be seen perched on the bushes, and occasionally darting off after some incautious fish. Looking over the sides of the canoe one is astonished at the quantity of fish that inhabit these waters, and this explains the presence of crocodiles, which in such places are extremely numerous. They are not really often seen, but one hears frequently of oxen caught by the crocodile and dragged

\* More correctly, about 75 per cent.—EDS.

† For much fuller information on the flora of Madagascar, see Mr. Baron's paper in last year's ANNUAL, pp. 322-357.—EDS.

off for assimilation, or of some unfortunate woman gathering rushes, who has been seized and disappeared for ever. Occasionally one rows under a group of flying-foxes hanging by their hooked claws. They turn their foxlike heads downward, expostulate vigorously, then unhook themselves and fly off with a strong steady flight. Such a stream ends in a wide lake or reedy lagoon, chiefly formed of *Cyperus æqualis*.

Along its sides grow tall grasses ten or twelve feet high, and one often sees a cormorant perched on a tree, with its bill in the air and looking sideways down at the canoe with a peculiarly leery expression. Such places are the chosen haunts of the thirteen or so species of wild-fowl, some as big as a small goose, others not larger than a quail. Herons of all shapes and colours abound, and other kinds of waterfowl are quite innumerable. Occasionally, though rarely, one sees a flock of flamingoes drawn up side by side, shoulder to shoulder, in a regular military line. The pure white line which their bodies form is visible miles away. Near at hand one sees the bright scarlet wing coverts which form a belt halfway down the white uniform. These lakes and sandy stretches form a large portion of the coast, but one soon begins to leave them and to mount the outlying flanks of the hills. These form a series of gentle slopes and valleys before one enters the forest proper.

This is the home of the Travellers'-tree, one of the most striking plants in existence. It has a stem eight or ten feet high and about twenty leaves spreading out like a fan, each of which is about twelve feet long. The bright white flowers grow on a sort of cone at the bases of the leaves, and the honey is busily visited by a beautiful little sunbird with a yellow and purple breast. The seeds are the great mainstay, moreover, of the rather dingy slate-coloured Malagasy parrot, which frequents them in great numbers. This tree is of the greatest use to the natives, whose houses are built almost entirely with its leaves. The water, however, obtained by piercing the leaf bases is lukewarm and of a rather vegetable taste. It is also here that the *Rofia* palm, whose split leaves are so much used by gardeners, grows. It is also here that the Bamboos thrive, with their enormous gracefully curved leaves, like a gigantic bunch of ostrich feathers, of a delicate yellowish green. The extraordinary *Nepenthes*, moreover, is not uncommon on these slopes. The grass clothing these gentle rises is very harsh and useless, and there is an abundance of the common bracken everywhere.

Soon, however, one enters the true forest, which covers three or four ranges of parallel mountain chains. The path is only about two feet wide, and is walled in on either side by a sort of gigantic hedge seventy or eighty feet high. This is formed of dense undergrowth and large trees, from the lower branches of which hang the enormous foliage masses of the climbing plants. The aim of Nature seems to have been to fill every available space with leaves. There are no glades and few of those agreeable vistas so common in English woods. Though the appearance of these trees is not really very striking, they are all of entirely different kinds. One here meets huge *Compositæ*, the *Vernonias*, with enormous umbels of purple heads; such *Leguminosæ* as *Neobaronia*, with fleshy, flattened, leafless branches; *Brexia*, a tree ten to twenty feet high, whose nearest relative in our country is the Saxifrage; *Weinmannia* is also a Saxifrage. Many of the largest trees belong to



Euphorbiaceæ, such as the genus *Euphorbia* itself and *Croton*. There is also a large forest tree, *Wormia*, a near ally of Ranunculaceæ. Few of these trees are beautiful; perhaps the bright pink flowers of *Ixora* or *Colea* are the handsomest, and one of these in full blossom is very beautiful indeed. The creepers are chiefly objectionable spiny Asparaguses or *Smilax*, but their number and variety is enormous. The undergrowth of *Plectranthus*, Balsams, etc., is often very beautiful, but it is on dead trunks and decaying stumps that one sees the finest plants of all: *Bulbophyllum*, *Angræcum superbum*, with its spikes, eighteen inches long, densely covered with large white flowers, and *A. sesquipedale*, with its enormous spur. Ferns of all kinds abound; tree-ferns twenty feet high; and in the deeper denser parts great quantities of *Hymenophyllum*, as well as many of our common forms.

\* The silence in these dense forests is sometimes quite oppressive. Almost the only animals are the different kinds of lemurs, whose shrill whistling bark may occasionally be heard. Different species are adapted to play the parts of monkeys, squirrels, dormice, etc., none of which exist here. The larger kinds live in large bands, leaping from tree to tree, and feeding on small birds, fruit, etc. Others live in hollows, regularly hibernating, and to do this store up their winter food in their tails, which become extraordinarily fat and fleshy. Here the wild boar passes most of his time. He wakes up towards evening, and spends the night wandering about feeding on the pommejacot (*Imbricaria*). Sometimes one comes on deep furrows made by him when ploughing up the lily bulbs, *Dioscorea*, etc. Sometimes he digs up the unfortunate *Tenrec*, a kind of hedgehog which hibernates below ground, and eats him, but his most favoured morsel is a snake. He begins at the tail and eats up the snake to the head, which he always leaves untouched. Towards morning he retires to a shady spot, and there makes a comfortable bed, covering himself with dead leaves and grass, where he slumbers till the evening. The only important carnivorous mammals are Insectivoræ, the largest being the *Fôsa*, a nondescript civet-like creature which one seldom sees. The whole of the animals are far less specialised structurally than those of the continent, while in habit they seem quite as distinct. Of birds the handsomest are the *Couas*, with very beautiful blueish plumage; there are also hoopoes, several kinds of pigeons, one of which has a sort of whining bark very much like a small terrier; a peculiar black starling also lives in flocks, flying from tree to tree. A bird called the *Toldho*, a kind of cuckoo with a very long tail, is quite common; it is very stupid and never seems to realise that its tail can be seen when once it has concealed its head.

Still, in spite of these exceptions, it is really insects, and especially butterflies, which give a little brightness and colour to the forest. Fifty or sixty brilliant blue and black butterflies fluttering above a little stream by the path are really a wonderful sight, and Red Admirals, pure white Papilios, and Acraeas with bright red spots on their wings, are all very common in the darker places. Sometimes one sees a millipede about ten inches long, with hundreds of twinkling red feet, crawling over the path; and a very large woodlouse, which rolls into a ball about an inch in diameter, is very common. But the insects are a study in themselves in Madagascar. When one emerges from the forest into the interior,

the difference is extraordinary. As far as the eye can reach, there is nothing but range after range of bleak granite or gneiss hills covered with a uniform grey grass broken by low scrubby perennials. Only small bushes with heath-like leaves seem able to live on the soil, which is a hard red clay, the debris of the granitic and gneissose rocks. The flowers are usually very inconspicuous, and it is most remarkable to find Rubiaceæ such as *Anthospermum*, Leguminosæ, e.g. *Indigofera*, along with *Hypericum*, *Stachys*, *Philippia*, etc., all taking the same appearance. There is even an extraordinary Monocotyledon which has done its best to become something of the same kind—*Vellozia*. Where there is more water, the flowers are more beautiful, and it is in such places that one finds species of *Disa* and *Habenaria*, with long stalks and bright pink and white flowers, or that most beautiful Gentian, *Tachadenus*, with a corolla four inches long, and the handsome shrubby *Impatiens* forms; but it is impossible to do justice to these flowers in a brief paper like this.

The main features of the flora are, however, easy to understand. There is a certain number of seaside plants, usually the same as those found along the eastern coast of Africa. The flanks of the mountains are covered with forest, and this flora shows most affinity with the forest plants of the East African coast; while the bare steppe-like highlands of the interior are covered with plants which show distinct relationship with the similar grassy plateaux of the Transvaal and the Shire highlands.

G. F. SCOTT ELLIOT.



### SOME AMUSING REMINISCENCES OF MISSION WORK AMONG THE SIHANAKA.

IT needs that one should live for many years right in the midst of a heathen tribe like the Sihanaka to properly sound the depths of their heathenism; a superficial and passing glance will not suffice. Though having been only five years in Antsihanaka, I think that a few points which I have collected, amusing and otherwise, about these people and the mission work carried on amongst them, may be interesting to the readers of the ANNUAL, and may perhaps form a continuation of the Rev. J. Pearse's article in a previous number (No. VIII., 1884, pp. 11-27).

A good deal has been written of late years about the Sihanaka, so that it is not necessary for me to enter into any details as to their manners and customs, etc.; suffice it to say, that here at our station, Imèrimandròso, overlooking the northern end of Lake Alaotra, we are in the midst of the true Sihanaka, who live in a few scattered villages, distinct from those inhabited by the larger number of Sihanaka who have contracted marriages with the Hova and other tribes.

The mission work carried on by us is comprised under these heads: Medical, General, and Educational, in addition to which we have had, and still have, various building operations which will, from beginning to end, require three years for completion. We are therefore in constant contact with the natives in one way or another, and many are the incidents, in many cases trivial, as may be supposed, that give rise to amusement, as well as at times to sorrowful reflections on account of the ignorance and superstition so innocently displayed.

Take our American organ, for instance, it is a constant source of surprise to the natives from far and near. About a year and a half ago we had a patient in the compound under surgical treatment, too ill to get about, who was exceedingly anxious to make nearer acquaintance with "the big musical piece of wood that prayed" ("*Ilay kakazo lehibe maneno nivavaka*"). (This, by the bye, would seem to beat the Buddhists' rotary praying machine!) A number of people who have come from a distance often return, bringing some of their friends, and ask permission to see and hear the "praying box."

To the uneducated and raw native, all the books ranged in the shelves of the missionary's study are "*Baibôly*" (Bibles). A microscope is taken for a form of pistol or revolver, of which the people generally are much afraid. The microscope, however, one day did good service a little more quickly than would have been expected. Our water-carrier was casually asked to have a peep at the animalculæ in a specimen of water from the large storage pot. He was amazed and frightened at seeing all sorts of creatures wriggling about in a most uncanny manner, and there and then went off, without word or hint from us, to clean out the large water-pot much more thoroughly than he had ever done before!

An aneroid barometer, which had been fully explained to my teachers one Tuesday, was the cause of much astonishment at its confirming my warning of stormy weather on the Wednesday, predicted by its means.

Barometers bring me to clocks, specially to a striking one belonging to a recently settled evangelist from Imèrina. The natives, a very heathen set, filling up the house and thronging the doors on his arrival, were filled with awe and wonder on the production of such a civilised piece of mechanism as an eight-day clock; and when it struck, well—that was the climax—it must have been ill from the long journey, for didn't its stomach feel out of order and roll most violently? Yes, it was by one consent "*migóraraika*" ("rolling with wind in the stomach"). The natives of Ránomainty, a village about three or four hours' ride from Ambatondrazaka, on the other hand, on a small American time-piece being shewn to them, thought it a species of insect, and when they heard it ticking, they declared it to be alive.

During the first six months of our sojourn here at Imèrimandrôso, we had to live in a Sihanaka rush house. To make it warmer during the winter months, we put up a glazed window found at Ambatondrazaka. It was amusing to see the black belles of the neighbourhood coming up to have a look at themselves, specially on market days, when they get themselves dressed up a little in red and other coloured *lamba*. One young lady at Antsirabé, on seeing the reflection of her beautiful self in a looking-glass we carried, remarked how pretty she was, and felt very disappointed that we did not sell such articles. This remark

about selling reminds me that we are often thought to be merchants by the uninitiated, and many times have we had to send off intending purchasers of cotton cloth, gunpowder and other articles, including strong drink, even on Sundays.

The Sihanaka, like other heathen tribes, have a superstitious dread of human bones. I well remember an amusing instance that proves this. I had recently received from a friend at home a present of a human skeleton in a box, for educational purposes. The skull I usually had placed high up on the shelf of my writing table. Government business having called up some of the headmen of the surrounding villages, I took the opportunity to invite some of them to call upon me at the mission house to discuss some matters relating to their respective congregations. They arrived, accompanied by the then assistant pastor of Ambatondrazaka. This latter personage is a Sihanaka officer and well known to us. He had been initiated into the mystery of the bones some time previously, and when business began to flag, he maliciously called the attention of one of the most heathen of his companions to the skull. I shall not soon forget the look of horror that took possession of his friend, and positively believe the sight of the skull had a reflex action on his pneumogastric nerve, so that he had to make speedy exit, followed by the whole company, who had observed the object of terror by that time and its effect upon their leader. Some were even afraid of shaking hands with the owner of the skull, bade us a hasty and unceremonious *velôma* (the Malagasy "good-bye"), and quickly left the mission premises. We have to be very careful with the bones now-a-days, as not only are the natives afraid to look at and handle them, but they are apt to entertain doubts as to the real composition of our various drugs, etc.

The squeamish chief of Ivôhidava reminds me of a strange and altogether unique specimen of a "deacon" I found there once. He was of all the heathen I have met, the shadiest, and of all deacons, the dirtiest. His once white cotton *lamba* had never made acquaintance with soap. It was now converted into deacon's superfine black cloth. It had undergone no mere ordinary dyeing process. Old age, soot, and notably *tséroka* (castor-oil), and, in plain terms, perspiration, perceptible and otherwise, had by a continued process made an oily substitute for all kinds of black dyes. It is needless to say that the finished article was odoriferous to a degree. It was truly a *fast* colour.

Another member of the diaconate, one from Ambôavôry, demanded a present of a *lamba* (native outer garment), giving out as his claim upon my bounty that he was poverty-stricken, and that he had been made a deacon. I asked who had made him one, and was told that the Government authorities had done so, and the reason vouchsafed was his poverty!

The so-called churches of Antsihanaka, in some cases no better than mere sheds, have for the most part what are called deacons, but the larger number are most ignorant, dirty, and poverty-stricken, and are apparently selected on account of these qualities. Their work is to stand and give gentle reminders to such as do not close their eyes during prayer that it is unseemly to gaze about. The office is of course looked down upon, and here at Imerimandroso even now, I cannot get a suitable person to be a deacon according to New Testament require-

ments. Lately, however, I have been somewhat encouraged by seeing at Ambôhimànga a worthy couple who help the evangelist as deacon and deaconess, really out of love to the work.

We sometimes have people come to us from long distances for treatment, and it is amusing to note the different forms of conveyance they make use of at times. One notable case comes to my mind. I had never seen a raft used as a palanquin, until one day a middle-aged long-haired Sihanaka came in what to all appearance was one of that species of craft. It was constructed of poles running from end to end, with the *zozdro* rush and other reeds laid crosswise, all well strung together with native cordage. (When the Sovereigns of Madagascar cross rivers, their rafts are made of this rush.) One could have sailed with impunity over Lake Alaotra on it. Unfortunately the man came with a knee very much swollen, and was not fit for nautical adventures.

This same individual, when convalescent, after having two large-sized drainage-tubes through the knee-joint, unfortunately took to a form of dancing called *Ràmanénjana*. The strongest current of a four-cell battery did not seem to affect him, otherwise than to make him yell out at the top of his voice. The hysterical attack still kept on, he holding intercourse with the old kings Radàma and Andrianampônimérina, as he afterwards told us in all seriousness. A douche of cold water stopped the attack for the time, and later on he sent his slave all the way to his house, about twelve miles away, to throw away a certain hat, which he believed was the cause of his illness.

As in the time of our predecessor, foreign medicines are still feared to some extent. One woman at a village not far away said she would not have medicine then, as she had previously dreamed a dream forbidding her to do so. She evidently desired to have something to cure her, but thought it better to await another dream which might possibly allow her. Within a fortnight, however, she died.

Another instance arose out of slight misunderstanding of directions. The patient, a workman here at the time, was ordered a powerful liniment for rheumatic pains in his bones. Next day he did not look any better, in fact, he appeared worse; and on my asking him if he had applied the liniment, he looked at me in a very sheepish manner and said, "I have been rubbing my head with it!"

Another case was of a woman giving the liniment to her child to drink, instead of rubbing the infant's chest with it, evidently thinking the internal application of European medicine more efficacious.

Our prescription papers are a source of much mental trouble to patients. Some think they are *ôdy Vazàha* (foreign medicine), or charms to be used along with the medicine. Some think that they must have a new paper whenever a new symptom manifests itself, supposing, no doubt, that the last paper received has lost its power, or perhaps has no power to deal with the new symptom.

We lately prescribed for a patient who averred that the inhabitants of Imerimandroso would not let him live in the town, because he snored so loudly that no one could get any sleep within a considerable radius! He was, it is said, an outcast for the same reason at various other villages.

Very comical at times are the looks of certain dark-skinned individuals with eye-diseases, who put a circle of *tànràvo* (white earth) round

the offending member. Others dot their foreheads with the same, while others, not thinking that enough, daub it all over different parts of the body. One youth was told by his father that the reason of his having his eye become all white (a simple case of keratitis) was that he prayed. If he had not been a *mpivavaka* (praying person), he would not have had the disease. Unfortunately, many who have never been inside a church, or have never come to us for treatment, have the same disease in more or less aggravated forms.

Although there is much to sadden one in working amongst a tribe so heathenish as the Sihanaka, still, from what I have hurriedly put together, it will be seen that there is a humorous side even to mission work among them.

J. G. MACKAY.



#### "FAMADIHANA," A MALAGASY BURIAL CUSTOM.

THIS subject is distinctly sombre in complexion and not in keeping with the topics generally descanted upon in the ANTANANARIVO ANNUAL. The sepulture of the dead can have but inferior attraction in comparison with such poetical themes as the plumage of birds, the habits of bees, and the hunting of boars. But if a gloomy subject such as this be chosen, a person of light imaginative temperament, who could gild the dark picture with something of redeeming brightness, should be asked to prepare it. Since, however, both subject and writer are determined upon, I will make no further apologies for inducing a train of somewhat dolorous reflections.

My information has been obtained from original sources, that is, through conversation with the natives themselves, or from personal observation; its accuracy may therefore be relied on. My informants comprise persons of all ages and conditions, from the withered old woman of ninety summers to children of tender years, and from proud nobles to mean slaves. Testimony has been carefully weighed and compared, and the results condensed into the following pages. The perusal can hardly be entertaining, but may prove interesting, as reflecting Malagasy thought and sentiment.

For the benefit of those not initiated into the mysteries of the language, the word *Famadihana* will be translated. It is derived from the verbal root *vadika* "to turn," and relates to the ceremony of supplementing the silk winding-sheets of the dead, thus occasioning the turning over of the bodies. It has come

into practice only during the last hundred years and is unknown outside the central province of Imèrina. How it arose, or who originated it, is only conjectured. The original graves of the Hova were simple and slight stone structures.

The nature of the ceremony will be best understood if the order of events is traced. Medication and incantation having failed to check the disorder, the patient succumbs. No sooner is life extinct than loud wailing is heard in the chamber of death. The hair is dishevelled, and all abandon themselves to grief. The house quickly fills with neighbours, who sit with bowed heads to sympathize with the stricken ones. This mute company continues the night through, dimly illumined by a flickering candle. The corpse is loosely covered over, but the cloth is ever and anon pulled aside that the loved features may be gazed upon once more. Money is inserted in the mouth, and the head is then bound up. It is a terrible scene and one not easily forgotten.

On the following day the people assemble in large numbers, and the body is borne to its resting-place. This, however, in cases where the people have as yet no family vault, is not the permanent tomb, but a grave hastily dug and overarched with stone to prevent contact with the soil. Charcoal also is laid thickly to absorb the moisture which would otherwise accelerate decomposition. (In former times the dead of Antanànarivo were carried up past the Palace to bid silent farewell to the Sovereign before proceeding to burial.)

When the interment is over and grief has subsided, the relatives begin arrangements for making the vault to which the body of their loved one may be removed. If in affluent circumstances, the work is taken in hand immediately and finished within two years, when the ceremony of *Famadihana* takes place. Sometimes, however, five or even ten years elapse before the tomb is brought to completion.

Mourning extends over a period of weeks or months, according to the degree of relationship. It consists in relapsing to a natural state; hair and nails are allowed to grow to gruesome length, the body is rarely cleansed and is clad in raiment of sad colour, and withal presents an aspect dejected and disconsolate beyond expression. Material dirt and disorganization are deemed necessary concomitants or symbols of mental affliction. Many abstain from Divine worship and regard singing as highly indecorous. Those who have the misfortune to lose wife or husband are oppressed by fear of foul play to deprive them too of life. They shun markets in the vicinity and make their purchases at a distance, where recognition is not probable. They also forsake the village spring and discover other sources of water-supply, lest poisonous ingredients be intrc

to their detriment. Such distrust, however, is not without foundation, since cases of mysterious decline and unaccountable collapse are not infrequent.

It is difficult for Europeans to appreciate Malagasy sentiment. We look at things from an altogether different standpoint. It is like an inhabitant of frost-bound regions idealizing the efflorescence of southern latitudes. Imaginative sympathy is requisite to understand the native position. We must remember that *Famadihana* with its related beliefs is the product of a dim instinct of immortality coloured by native imagination. Malagasy notions in this connection have not been affected by the doctrines of Christianity; the whole theory is an elaboration of unaided heathenism. No trace of Revelation indicating the spiritual circumstances of the dead, of destiny determined by character, can be detected; nothing but the primary belief that the sentient soul survives the mortal body, and that the happiness of the departed may be enhanced or diminished by the affection or neglect of those left behind. Honours to their memory afford appreciable gratification, since the spirit is not completely dissociated from the defunct organism, but is still sensible of comfort or its opposite. Hence the tombs are made durable and commodious and are provided with domestic utensils, as well as occasionally embellished by painting to enliven the long days to be passed within its dreary chambers. Many who grudge to spend 40 dollars on their homes lavish 200 dollars on their tombs, and for the simple reason that the one is to be tenanted only for a brief uncertain period, while the other will be their environment for ever; so no labour is spared to make it solid and attractive.

The first serious work of life is to build a tomb. Other projects of amelioration and improvement of earthly condition are totally eclipsed until that be compassed. Repose in the tomb absorbs their physical and mental activity, and the work is prosecuted with assiduity, since it involves deep disgrace to die without its accomplishment. To remain in a temporary grave and not be transferred to a substantial vault is esteemed a dire calamity; the slight structure will be demolished by the elements, the precious remains be absorbed by the earth and no trace or memorial left. No importance is attached to the personal character of the deceased; provision for the mortal relics is the momentous consideration. When a due proportion of the property has been consumed in obsequies, and behests have been faithfully carried out, grief is sensibly assuaged, and any defections during life consciously atoned for. This beatific consummation is the main incentive to industry and hoarding, and any who disregard the common instinct are contemned as having forfeited their humanity and are relegated to the



category of the beasts that perish. "Better never have been born than neglect to provide a resting-place for dead parents." Every argument is urged to force compliance. "Our parents endured pain and misery to benefit and establish us, and shall we allow them to lie in ignominy? Base, impious ingratitude!" The estimation of both living and dead depends much on the quality of their tombs, solidity and splendour are the measure of honour. The man who is unable to boast a tomb is a nonentity in society and unworthy of consideration. Hence, except in cases of extreme hardihood and indifference to public sentiment, no one omits this filial duty. Labour and money are expended, often in utter disproportion to means. And occasionally rival claims for honoured progenitors give rise to feuds and litigation. I once witnessed a *Famadihana* which threatened to terminate in disaster. The corpse of a grandsire was brought from the grave, but through some disagreement was contended for by opposing factions. Words ran high, the parties closed, vociferation was alarming, and battle seemed imminent. By some inscrutable means blows were averted.

No distance or difficulty deters people from recovering the bodies of their loved ones. A man with his friend recently set out from Ambôhibelôma on a fortnight's journey to fetch the remains of his son who had died while trading in a remote part of the island. The body, then in an advanced stage of decomposition, was wrapped up, suspended horizontally from a pole and thus carried through 250 miles of dangerous country.

Not only is the complacency of the dead solicited, but, being credited with preternatural power which may be exercised for their advantage, special attentions are bestowed to secure such services. At the Fandrôana (or Annual Feast) the fat of the prime parts of beef is besmeared on the door of the vault, and offerings of sugar-cane or oranges are presented as a token of loyal remembrance. Their potent influence is invoked to manipulate the subtle forces working out their destiny and thus achieve augmented prosperity and more complete happiness. Childless women implore their intervention to remove sterility, and the sick bring gifts to neutralize the hostility which is suspected to be at the bottom of their maladies. But I must confess to a discrepancy here. The ghost is imagined to reside in the tomb in loose connection with the body, while at the same time it is widely believed that the spirits of the dead congregate at Ambôndrombè, a high mountain shrouded in fearful mystery.

No one seems able to give a satisfactory explanation of the inconsistency. It is alleged that the nebulous mist enveloping the mountain occasionally undergoes a strange metamorphosis and resolves itself into a golden-age civilization. Individ-

physical appearance and the constitution of society are not materially changed. Stately buildings and dwelling-houses are visualized, and proclamations and festivities, including the sublunary pastimes of bull-baiting and cock-fighting, are seen in actual progress. Vast multitudes clothed in white *lamba* are distinctly visible, and moving in solemn pomp are former Sovereigns, who still exercise dominion over their contemporary subjects. This amicable arrangement precludes civil discord and ensures the prosperity of the realm. Monarchs are conspicuous by the capacious scarlet umbrella and other insignia of royalty. The acclamation of crowds, fitful bursts of martial music, with interludes of soft ravishing minstrelsy and occasional noise of cannon, are the salient features of this celestial sphere. As the day declines, home fires are kindled which radiate bright beams into the deepening night. All the inhabitants are merged into a promiscuous mass without distinction of good and bad, glorified and doomed. Death involves only a translation from a material to a semi-etherealized state. Character and pursuit are conserved and undergo no crisis or change. Existence there is merely an extension of human experience here, with the element of pain eliminated, or at least minimized. But beyond broken and evanescent glimpses, its phenomena elude our low powers of perception, being only appreciable to those who have passed into its order. If approached, the splendour fades, and the fair fabric dissolves.

But disembodied spirits are not confined to that region, having considerable latitude to follow personal inclination. Particularly do they linger about their still corporeal kinsfolk. Many seem privileged with periodical apparitions of those "loved and lost." According to some, however, this comparative bliss is not permanent; the end comes at last, when consciousness is extinguished, and the soul is absorbed into Deity. This final obliteration was spoken of by the ancients with deep despondency.

But to descend from these altitudes. I will not dilate on the process of stone-splitting as practised by the Hova for their graves. Suffice it to say that the expense connected therewith, varies from six to sixteen dollars, according to the size and thickness of the slabs. When all are detached and rough hewn, intimation is given to the local authorities, and at day-break the whole available community assembles, sometimes to the number of 200 to 300, to co-operate in the work. The stone is raised on to a low rudimentary carriage, stout ropes are attached, and the slow march begins. The place of danger near the stone is occupied by the men, while women and children take position in line at the farther end. The signal is

given, and all strain like horses. One man, mounted on the stone, incites the labouring teams with shout and song until the stone reaches its destination. (Formerly the blood of a sheep or fowl was spilled on the stone, while a representative of the family called aloud on gods and ancestors to prosper the undertaking.) When all are brought without mishap to the appointed place, a large square hole is dug, and three slabs of rock are let down for the sides of the tomb. The doorway is made facing the west; four or eight wide shelves are fixed around the sides to receive the dead, and, last of all, an enormous slab is placed above to cover in the whole. All the stones are carefully dressed and fitted by skilled masons. At the close of each day's labour oxen and pigs are killed for the delectation of those who have wrought, and this provisioning of hungry crowds is no inconsiderable item of the expenditure.

In old times tombs were erected on a hill above the village in consequence of a superstition that death was simply forcible abduction by ghosts. If the tombs were below the level of the houses, the advantage was on the side of the ghosts, but if higher, they might be more easily resisted. When the vault is finished, the remains of all ancestors and relatives are exhumed for removal thither. This is a very impressive proceeding. The oldest male survivors remove the earth and stones from the grave, and when an opening has been effected, aged and decrepit females enter to identify the different corpses. The founder of the house or clan is brought out first and hailed with terrific shouts, followed by the rest in like manner, with the name of each announced.

Simultaneously with this an old attenuated cow (or a black hen) is sacrificed as symbolical of the natural desire to attain to old age. The remains are then removed to a tent and guarded through the night by the whole clan to prevent desecration from witches. The *lamba mena* (red silk wrappings) are procured at the markets, prices ranging from seven to sixteen dollars each, according to size and texture. The station of the deceased determines the number of *lamba* in which he is to be enfolded. Some are apportioned seven or eight, representing a cost of a hundred dollars. Though the family be in reduced circumstances and unable to afford an elaborate funeral, the kinsmen are inflexible in their insistence on the obsequies being duly carried out. Many are thus plunged into poverty or involved in debt from which they never extricate themselves. The living are impoverished to aggrandize the dead. Winter is the season of *Famadihana*, as being consonant with the sterile torpor of death, and further because it is a time of enforced leisure from agricultural work.

The relatives restrict themselves to a special dietary for

month before the ceremony to promote plumpness of face and form, such a condition being well-pleasing to the dead whose honours are celebrated. The day is fixed by the native diviner and is usually in August or September, always when the moon is waning or "old," since it is preferred that the aged should die first. Should it by mistake be performed when the moon is increasing, or in the morning, it is considered certain that some of the young will die; if when the moon is full or at mid-day, the full grown will suddenly expire, but if when the moon is decreasing and at evening, the old only will be taken in natural course. But it must be done before sunset, since interment by night is the exclusive prerogative of members of the royal family.

Human remains from a distance are conveyed in a hearse, the sides of which are brilliantly painted with curious devices, comprising domestic scenes, dances and kicking matches, incongruous and grotesque beyond description. Some, with effigy affixed, are carried round in these hearses to revisit familiar scenes of pleasure and business.

During a week before the *Famadihana* music is played at the old grave to summon the ghosts from their invisible markets or distant haunts, and when sufficient time has been allowed for the locomotion, formal announcement is made that their descendents have completed the residence, and that shortly their mortal remains will be transferred thither. Incense and fat are also kept burning as an additional attraction to keep within call. A fire is lighted in the new tomb for the "house-warming," that the ghosts may not have the pretext of cold for wandering at large, but may settle there comfortable and contented. When a recently dead person is being removed from the grave to the vault, the nearest surviving relative flees for life, lest the ghost should apprehend him and effect a speedy reunion.

A band of musicians is engaged to provide diversion for the occasion; their fee varies from three to sixteen dollars, depending on proficiency and reputation. The company called *Biby* (animals) are the most renowned, and their art is cultivated to a high pitch of excellence. Sometimes unscrupulous people, in order to secure a great crowd, give it out that they have engaged these first-class players, when, in fact, they have only employed an unknown and indifferent company. The disappointment and fury of the mob are better imagined than described.

On the memorable morning old and young of all conditions assemble to witness the popular play. All are decked in their newest and best (sometimes not theirs, but *hired* plumes), and cardinal colours largely predominate, but toned and varied with many intermediate hues. The wife or daughter of the

mourning house occupies a chair in a conspicuous position, is attired in a stylish dress of gayest colour, often yellow, and the head is encased in a glittering tinsel crown. A green parasol is held by a slave over this queen of the festival.

Feminine foibles and finery are, however, exceeded by the vanity and foppery of the sterner sex. Obsolete and discrepant European habiliments are paraded to impress contemporaries with a due sense of personal importance, and certainly evoke undisguised admiration from the simple and unsophisticated. It is a striking spectacle, with its sprinkling of grey heads among crowds of bright youths and maidens and groups of merry children. All are animated and expectant. Around the country-side for miles are strings of people converging to the rendezvous. Soon the dense mass numbers thousands. The music strikes up, stringed and unstringed instruments combine to produce a "concord of sweet sounds," with original and fantastic variations, or occasional lapses into harsh and hideous discord. At the close of the piece there is a general murmur of applause. A peculiar dance performed by the entire company (consisting of eight men and four women) usually follows. Hands and feet are brought into lively action, displaying wonderful agility and grace of motion. This is succeeded by a ballad half sung, half recited, expatiating on the vicissitudes of life and the fluctuations of fortune, which is listened to with breathless interest. Eyes dim with tears or flaming with ire are fastened on the bard. Touches of pathos evoke the expressive native click, while, anon, coruscations of droll humour or sparks of keen wit elicit explosions of mirth. When a climax is reached, excitement becomes irrepressible and bursts into a din of applause. The immense crowd is fused by strong emotion into a glow of high-wrought sympathy.

Meanwhile the sorrowing relatives have formed in double lines within the tent and receive the corpse on their extended knees. They stroke and caress it, at the same time uttering wild wailing cries. When the face is uncovered, there is a frenzy of grief. \*Money is placed inside, and grease besmeared, on the outside of the wrappings, which are then supplemented by new ones. Amid the supplications for children, wealth, or old age, is sometimes heard the cry, "Take me, my dear lost one, even into the darkness, if only to be with you." Such episodes are deeply affecting and sink into the heart. "One touch of nature makes the whole world kin."

By this time the entertainment is concluded, and the highest official among the audience expresses the pleasure they have experienced and hopes that wealth spent in honour of the dead may be multiplied to the living. This is replied to in a speech

thanking them for their attendance on the occasion, and assuring them that no worthy family tradition will be departed from. Attention is then directed to the real function of the day, for the play is only an attractive accessory. The corpse is lifted to the shoulders of eight men, who carry it around the tomb three times (in imitation of the festival connected with the settlement of a bride in her new home). Deafening shouts rend the air, accompanied by discordant blasts of music and firing of guns to arouse the pensive ghosts. And, as a means to an end, the ineffable blare and screeching would certainly seem adequate.

When this manœuvre has been enacted, the passage to the tomb is cleared, and the bearers make a rush to deposit the corpse in its new domicile and decamp with like speed. (In case of others also having been removed, the honoured founder of the family is deposited in the highest central chamber, where a prospective place is also reserved for the builder of the tomb.) Members of the family now enter to note its position and mark the *lumba* for future identification, then, after a long and tender farewell, take their departure. Some one, however, enjoins on the dead the propriety of keeping "at home," and not molesting the living: "You have your nice house all to yourselves, and no one interferes with you; have then a like regard for those who happen to survive you."

In cases of numerous ancestors in a decayed condition, each is not wrapped separately, but families, sometimes to the number of ten, are enclosed in one wrapping, since the mutual relationship is conceived of as still existing. After a *Famadihana* some tombs cannot be reopened until a year has elapsed; any one dying during that period, therefore, is only buried temporarily. (Among the Sakalava tribe the skull is severed from the body, and when polished and adorned is preserved as a domestic heirloom.) The stone door is then wedged in and barricaded with earth. Oxen have in the meantime been killed and dismembered, and a portion of the beef is now presented to each person, who in return contributes his mite towards the expenses. The crowd then disperses, elated and jubilant at having witnessed a scene which ever kindles vivid imagination and stirs profound emotion. The mat in which the corpse was carried is contended for by the women as a charm to ensure maternity and prevent the extinction of the family.

The songs on such occasions deal largely in commiseration with orphans and childless women, as having no one to protect them while living or to deplore them when dead. Their forlorn condition excites real pity. Some of the sentiments may be translated thus: "There is no one to compassionate, whatever befalls." "If the luckless woman adopts other people's children,

she does not secure genuine affection, it is only her property that is regarded, and the sooner it is relinquished the better." "If tears were children, then the barren woman would have a large family indeed." "Let not the orphan take on airs, for he will only get snubbed and cuffed." "Let him rise early and toil late, for he has no father to provide for him." "Divide your property into three parts, one to be lived upon, another to be buried with, and the last to be left to posterity." Others are of a more humorous description, e.g. ; "A youth who marries an old woman gets her share of food in addition to his own" (appetite diminishes when mastication is defective). "When old women meet, they overwhelm each other with congratulations." "Sore eyes (a common complaint) is deprived of his portion of morning sun." "Sore eyes' mother feeding her family is often hoodwinked and serves the same one twice." "Sore eyes arrives first at market and leaves immediately" (to avoid being seen). "Sore eyes at a play weeps when she should laugh." "If she goes to a funeral, she takes precedence in weeping." "The ugly and hard-favoured ought not to repine, since whatever sort of a face they have it is the one most appropriate for *them*."

Imaginary dialogues between the dead and mourning friends are recited. The altered circumstances are discussed, the cruel separation and gloomy desolation are deplored. The significance and certainty of death is largely dwelt on, and the wisdom of a good and right life, since penalty follows wrong as shadow its substance. Moral platitudes and precepts are strung together in an extraordinary fashion, and one is amazed at their piquancy and the rapidity with which they are hurled out.

In former times the head and body of the wealthy were encircled with chains of silver. Money was also deposited in piles around the corpse, and articles of property filled the tomb. There was, however, a tacit understanding that in case of penury the descendants might fall back on this reserve store, but it could not be appropriated except on the occasion of a funeral or *famadihana*. In more recent developments of national life, however, reverence for the dead declined, and the shadowy occupants of tombs were challenged and resisted. Bands of burglars met on dark nights provided with candle, spades, and weapons, and proceeded to their sinister work. Considerable commotion is said to be audible within the vault, but the ghosts speedily retreated before superior force, and so the tomb was plundered and the dead despoiled. The silver chains were wrenched from the bodies, and the sanctum was left in revolting disorganization. That custom has consequently fallen into desuetude, and only articles of personal property and of little intrinsic value are now placed at the side of their former owners.

Having already transgressed my bounds, I will conclude with a few reflections on the tendency of *Famadihana*. No one grudges the Malagasy any innocent or healthy enjoyment. Brightness does not so preponderate in their existence that it should be diminished, or natural instincts repressed. And on these occasions they find much real diversion, whose alternation with monotonous toil must be highly beneficial. But there are grave physical and moral evils indissolubly connected with it, and the transient elevation of feeling does not compensate for the permanent depression of vitality and degradation of morals. Germs of disease and decay are disturbed and propagated in the atmosphere, engendering contagion to decimate the population and impair the vital stamina of the community.

But the moral detriment is even more definite and demonstrable. The players stipulate for a free supply of rum as stimulant during the performance, and sometimes they are so inebriated as to be unable to proceed with their parts. And when all is over, the people collect in groups around the bottles, and the air is soon polluted with the fumes. Numbers go reeling home, men and women filthily intoxicated are carried on others' backs. Feuds also arise resulting in fights. These strolling players are, almost without exception, persons of dissolute character, and when the crowds are gone, and their duties done, they abandon themselves to riot and immorality. Many drink to intoxication, ribald songs are sung, animal propensities are stimulated, and nameless sin ensues.

These Pandemonium scenes are often continued until morning and involve many of the villagers. It is a source of vileness which pollutes the stream of national life, a vestige of foul heathenism which withers and blasts all that is fresh and pure and strong, augmenting and reinforcing an element in the moral atmosphere which renders virtue impossible and vice prolific. It is in direct opposition to the refining influences of civilization, and tends to neutralize the transforming action of Christianity. Health contracts disease by contact with mortal corruption, and imperishable natures are contaminated by vapours of infamy which inflame with fires of hell. It is high time that such a custom with its inherent evils was suppressed, as inimical to the physical permanence and the moral soundness of the Malagasy people.

JOHN H. HAILE.





## MADAGASCAR ORNITHOLOGY:

MALAGASY BIRDS ARRANGED ACCORDING TO THE NATURAL ORDERS,  
WITH NOTES ON THEIR HABITS AND HABITATS, AND THEIR  
CONNECTION WITH NATIVE FOLK-LORE AND  
SUPERSTITION.—PART IV.

(Concluded from ANNUAL No. XV.)

CHAPTER VI.—THE WILD-FOWL, PELICANS, SEA-BIRDS,  
DIVERS, EXTINCT SPECIES, AND DOMESTICATED BIRDS.

I.—**W**HEN speaking, in the last chapter, of the Waders, it was remarked that the physical conditions of Madagascar rendered it well fitted to be a home of that Order of birds; and this is equally true of the next Order, according to Dr. R. Bowdler Sharpe's classification, that of the Wild-fowl. As will be seen by the Tabular list (p. 431), there are ten species of Wild Ducks, Dwarf Geese, Diving Ducks, Teal and Tree-Ducks living in this island, and these find appropriate conditions for their existence, together with abundant food, in the numerous marshes and small lakes and meres found in many parts of the country, as well as in the extensive lagoons of the eastern coast. Two of these Wild-fowl are peculiar species, but the rest belong to widely-spread kinds.

In some parts of the island the Wild Ducks are found in vast numbers, especially in the immense swamps which cover the greater part of the level country in the Antsihanaka province. These mark the former extension of a great lake, which in ancient times covered the whole valley, and of which the present Lake Alaotra is the still slowly diminishing remnant. In a journey round the north-western portion of the province in the year 1874, I was much astonished with the immense numbers of water-fowl we saw in every direction. Large clouds of them flew overhead as we crossed the marshy tracts, almost darkening the air.

An intelligent native who lived for three or four years in Antsihanaka thus describes the bird-life of the Alaotra and its neighbourhood:—

"The birds," he says, "are exceedingly numerous, but those which go in the largest flocks are the *Tahia* (a Tree-Duck) and the *Tsiriry* (an allied species). These are found in great abundance and go in flocks of from three to four hundred, so that at evening, when they settle down along the shore, one cannot walk by the water-side, for the ground is black with them. Next to these in numbers are the birds called *Voron-tsàra* (a species of Dwarf Goose) and *Sàdakèly* (a Wild Duck). These also go in flocks, but in smaller numbers, from twenty to thirty together. There are also other birds which go in flocks, but do not always remain on the lake, visiting it only in the summer and autumn; these are called *Sàma* (a species of Flamingo). The *Sàma* is a white bird, of beautiful plumage, tinged with light pink shades. It is nearly twice the size of a heron and stands much higher; it is found in lines along the shore, like a file of soldiers, and there it seeks its food. There are also many

other birds on the Alaotra, such as the *Aròsy*, the *Fàralàmboitra*, and the *Angàka* (all species of Duck), the *Otrika* (a Coot), the *Talèvana* (a Big Waterhen), the *Vòrombèmainy* (a Heron), the *Famàkisifotra* (an Ibis), the *Miombonkòmana*, the *Vivv* (a Grebe), and the *Kitànolàno* (the name both of a Snipe and a Curlew). The bird called *Miombonkoman* when feeding, covers up its head with both wings until it has finished.

As regards three species of these Wild-fowl, M. Pollen gives a few particulars. Of the African Humped Duck, he says that "it is very common in certain parts of the island; it lives in the lakes and rivers so that it is constantly met with when travelling in those regions. It is always found together with the Teal, which is also very plentiful. According to the Antankarana natives, this bird is met with in great numbers from January to March, at which time the rains fall abundantly, so that the valleys and lowlands become great streams and lakes. The natives take these ducks at the moulting time, or at least when they are quite young, so as to rear them with their domestic fowls. They catch them in the following manner: on the lakes frequented by the birds they fix from bank to bank interlacing cords, below which, at the surface of the water, are placed numerous snares, so that these ducks and other Wild-fowl are taken when swimming. In this manner the Malagasy capture during the rainy season great quantities of Wild-fowl, from which they obtain more delicate food than that from the common Duck." The Sihànaka capture water birds by a similar contrivance.

Of the *Tsiriry* Tree-Duck (*Dendrocygna viduata*), which is common also to Tropical America and to Africa, M. Pollen says that "it is extremely plentiful in Madagascar, the Comoros, and the smaller neighbouring islands. At Anórontsànga I have seen a flock of a hundred of these ducks on the sea-shore among other crowds of aquatic birds. They are very difficult to take by surprise, for they swim and dive with great swiftness, and their flight is extremely rapid. Their piercing and whistling cry, uttered constantly when flying, consists of the syllables *pyswy, pyswy*. They attach themselves quickly to the places where they are fed; for instance, those kept in the Acclimatization Gardens at St. Denis, Réunion, are perfectly free, and do not fail to repair every evening to the sea-shore, yet they return every morning to the ponds where they are fed." This bird builds its nest on the hills among the grass, and the young are taken to the water as soon as hatched.

The Dwarf Goose, says M. Pollen, has a heavy flight, with none of the rapidity of the other Wild-fowl, but it is an excellent swimmer and diver, remaining all day on the water, except during the great heat, when it perches on the trees. It is extremely shy and, when alarmed, dives immediately, only to reappear at a considerable distance, so that it is very difficult to catch. Of this bird, however, Mr. Cory remarks: "Of all the ducks I know, it is the hardest to shoot, on account of the pace at which it flies." And Mr. W. Wilson also says: "I always thought its flight was rapid, anyhow it is very difficult to shoot. This bird, apparently known elsewhere as *Vorontsara* ('Handsome-bird'), is more often called at Itàsy *Tàtatsiry*, and in Imèrina *Vòronandriana* ('Royal-bird'), this latter name being probably given on account of the gorgeous markings on its neck and body."

Mr. Wilson says: "The Tsiriry is certainly the commonest water bird. On the marshes and ponds near Mānandāza I have seen as many as 500 together. Probably from the swarms of this bird in that district rises its name of Bētsiriry ('Many-Tsiriry')."

Mr. Wilson also remarks: "The *Faralambotra* or Red-billed Wild Duck, which is perhaps the most tender of all the ducks for eating, is sometimes named the *Sādakely*, but more probably from ignorance than anything else. This bird is specially sought after round Antananarivo for the Queen's table. All Her Majesty's birds are obliged to be shot with all slugs of iron wire, and not with lead, lest by accident a little lead swallowed should lead to lead-poisoning!"

Mr. Cowan mentions that the numerous lakes in the valley of Ihòsy bāra province) are the favourite haunts of herons, ducks, grebes, and rails. In a paper in ANNUAL VI., p. 92, Mr. Baron gives a list of 50 less than thirty-four aquatic birds (by their native names) found in the Alaotra lake in Antsihanaka; of these nearly half are still undescribed and cannot at present be identified. In the little museum at the M.S. College at Antananarivo, there is, among other Malagasy birds' eggs, a series of fifteen eggs from Antsihanaka, chiefly of water-fowl on the Alaotra. This collection includes those of the *Angaka* (*Anas Melleri*), *Itra* (*Sarcidiornis africanus*), *Tahia* (*Dendrocygna major*), *Tsiriry* (*D. iduata*), *Vorontsara* (*Nettion auritus*), *Onjo*\* (a Wild Duck), *Vòansina* (?), *Kazazaka* (?), *Otrika* (Coot or Waterhen), *Talevana* (*Porphyrio maragdonotus*), *Vivy* (*Tachybaptus fluviatilis Pelzelni*), *Kéokéoka* (?), *Vòroipòtsy* (*Ardea bubulcus*), *Ravarava* (*Rhyncchos capensis*), and *Tolòho* (*Centropus tolu*). Most of these eggs are white; two or three are pale buff, while that of the *Ravarava*, or Painted Snipe, is buff blotched with black. Those of the *Angaka*, *Ara* and *Onjo* are as large as a small hen's egg; that of the *Vivy* (Grebe) is small, but long and pointed; and that of the *Tolòho* is an inch long, almost spherical, and pure white in colour.

As for the native names of these Wild-fowl, many of them seem to be derivative of their screaming cry; as *Angaka* and *Akaky* (Meller's Wild Duck), *Rahaky* (Red-billed Wild Duck), *Voronkòika* (Dwarf Goose), and *Tsiriry* and *Vivy*. Other names refer to their appearance; as *Fòtsielatra*, 'White-wings' (Red-billed Wild Duck); † *Vorontsara*, 'Handsome-bird' (Dwarf Goose), which is also called *Màvoampinga*, 'Many-shields,' and *Jaifify*, 'Handsome-cheeks' (?), this latter being also a name of the Cottontail Teal; and *Mahèrilòha*, 'Strong-headed' (a Diving Duck). Some names of the White-eyed Duck seem to refer to its apparently bare appearance, for one means 'Moulting,' and another 'Plucked.' Many other names are obscure, at least with our present knowledge of provincial Malagasy.

Mr. W. Wilson tells me: "One of the smaller ducks which frequents Lake Itasy is known by the Queen's gamekeepers near Antananarivo as the *Tafiotra*, but at Itasy it goes by the name of *Andràndra*. [It is

\* Or *Hòujo*; Mr. Cory says of this duck: "Is it a Pochard, or the White-eyed Duck? The eye of the male is pure white, that of the female, brown; the plumage is dark rufous-brown above, with white on the wings, and mottled breast."

† Mr. W. Wilson says: "The name of *Fòtsielatra* is at Itasy confined to the small duck which is known as the *Kintokely* or *Sadukely*, but is never given to any other, to my knowledge."

probably the *Thalassornis leuconota*, see Table at end of this chapter; J.S.] It is a smallish duck, of a reddish-brown colour, somewhat mottled with black on the breast, with a funny 'dumpy' appearance. It is not difficult to procure. The natives tell me that the female bird experiences some difficulty in the laying of her eggs, which are very large in proportion to the size of her body. Indeed the passage of the egg is said to make the bird faint and become unconscious (*torana*). If found just at this time she may be taken off her nest with the hand. On account of this peculiarity the bird is *fdy* or tabooed by all native women, who think that they would experience a similar difficulty in child-birth, were they to eat the bird."

Mr. Mackay also says: "The Tafiotra lays the largest egg of any fowl on the Alaotra. It is generally known as the *Adàladàla* ('Foolish one'), as it does not fly away until one is very near it, and it is consequently very easily shot. It is generally fat and plump and very good eating (our own experience). General report says that it is *torana* (faint) when laying its eggs. One man, however, denied this with some vehemence."

II.—The three Families of the ninth Order of birds, including the Frigate-birds, Tropic-birds, and Pelicans proper, are all represented in Madagascar, although the first two of these being *ocean* birds, it might be more correct to say *around* the great island; and it also seems strange that they are not included in the next Order, that of the Sea-birds.

1.—Of the single species of Frigate-bird that frequents the west and north coasts, M. Pollen remarks that "these birds are not rare in the seas surrounding the coasts and islands of Madagascar. They are almost always seen flying very high in the air and most frequently are solitary. At the same time I have sometimes seen them in companies of a dozen together, hovering and describing large circles in space. They are true pirates, living almost in dependence upon other fishing birds, whom they force, when these are weaker than themselves, to give up the fish they have taken. I have, however, seen these Frigate-birds themselves engaged in fishing by darting, like the Gulls, upon the fish, where these appear at the surface of the water. According to native accounts, they make their nests in clefts of the rocks, and lay a single egg."

2.—Little seems to have been observed in Madagascar of the two species of Tropic-bird which are found in the seas surrounding the island. In habits and appearance they probably do not differ from the other species of this widely-spread oceanic bird. No native name, so far as at present known, has been given either to them, or to the Frigate-bird just described. But of the White Tropic-bird, which is very common in the lofty cliffs which form a vast rampart round the island of Réunion, M. Pollen gives many particulars, from which an extract or two may be given, because, although M. Pollen has not himself observed this bird on the Madagascar coasts, it is known to frequent them, and its habits here are probably the same as in the Mascarene Islands.

He says: "The White Tropic-bird may be seen in couples or singly, soaring high in the air, both along the coast and in the open sea; according to the statements of seamen, it is never seen further than a hundred leagues away from land. Its flight is rapid, but often interrupted by light strokes of the wings. Immediately it perceives any fish

Near the surface of the water, it darts suddenly upon them, plunging sometimes to a great depth. Having seized its prey, it rises by a few powerful strokes of the wings and swallows it, flying just at the surface of the sea. These birds nest in the island of Réunion, in the clefts and fissures of the precipitous rocks round the coast. In the month of March they lay, on a bed of a few feathers, a single egg of the size of that of our Raven, oval in shape, and reddish-brown in colour. The clefts being very deep and narrow, it is only with great difficulty that the nest can be procured. Still there are some adventurous people among the Réunion Creoles who are daring enough to rob the nests of the young birds and to capture the parent birds, being let down by their companions with cords from the summit of the precipices. The old birds defend their nest bravely, often inflicting severe wounds with strokes of their beaks. They are said to remain all night on their nest, leaving it at sunrise to fish in the open sea, and usually return at noon, to remain there until the following day."

3.—The third Family of this Order includes one Pelican, two Darters or Cormorants, and a Gannet.

The African Cormorant is frequently seen on the rivers of the west coast, as well as elsewhere, perched on the dead branches of the trees on the river banks. Here it watches the surface of the water, darting down like an arrow on any fish that may appear. It is not at all shy, and so can easily be approached near enough to be shot. But it is quite different when the bird is on the water, for it swims and dives rapidly, remaining a long time under the surface. The Sakaïava give this bird the name of *Renivoay*, i.e., 'Mother (or Guardian)-of-Crocodiles,' for they insist that it acts as a sentinal for these reptiles. They say that when one of the birds is seen perched on a tree by the river, one is certain to see, not far off, a number of crocodiles. Other and similar names for this Cormorant are *Sakaizamboay*, 'Crocodiles'-friend,' and *Aronobvy*, 'Guardian-of-the-Enemy,' i.e. the crocodile, *the enemy par excellence*, and the most feared of all the living creatures in the island. It is also termed *Vorompisaky*, which probably means the 'Bird-that-takes(pre)-from-the-water;' and *Faméfikangaty*, 'Shell-breaker.'\* It is a much larger bird, and also much rarer, than the other species, the *Manarana*.

As to the other Darter, the Black-bellied species, it is a curious fact that this Madagascar species is the same as that found in India, and is different from that of Africa, an example of Oriental affinities of which the Malagasy Avi-fauna furnishes so many illustrations. In habits, food and habitat this Darter resembles the one already described, except that it is more shy, is swifter of flight, and dives more adroitly. It also shares the name of *Renivoay* with its cousin the African Darter. As described in their English names, both these birds have remarkably long and flexible necks, enabling them to dart upon their finny prey. They usually sit solitarily, with the neck bent into the figure of an S, but there are always some others not far off. On getting a fish, the Darters throw it up into the air and catch it by the head, which is devoured first.

In the previous chapter, when treating of the Ibises, it was noticed that the word *Manarana* appears, from the provincial names, to be a generic

\* The *Angaty* is a black spiral freshwater shell, *Melanatria Johnsoni* (E. A. Smith); P.Z.S., 1882, p. 383.

name applied to several different species. Mr. W. Wilson remarks :

"I have never known this name applied to any other bird but the Cormorant, I presume the 'African Cormorant:' certainly at Itasy and in the whole of the district 20 miles round the lake, the name is given only to this one bird, which sits all day long on some convenient rock or branch of over-hanging tree, watching for the small fish, which are always abundant in the shallower parts of the lake. These birds and their cousins the Snake-necks always throw the fish they catch high up into the air, in order to 'bolt' them head foremost. The Cormorant is a regular 'gorger' (hence probably its name, and is easily shot, being seldom found with a partially empty stomach. It is not difficult to rear it in captivity, but it lives exclusively on fish."

As to the Gannet, M. Grandidier says that it is seen in parties of from eight to ten birds fishing together; but it is often attacked by the Lesser Frigate-bird and compelled to disgorge its prey for the benefit of the more powerful bird. These Gannets make their nests and rear their young in all the smaller islands of the neighbouring seas.

III.—Although in the last-mentioned Order there are, as we have seen, several species of oceanic birds, the tenth Order, according to Dr. R. B. Sharpe's classification, is that of the Sea-birds proper, and includes nearly a score of those widely-spread and powerfully-winged species belonging to the Terns, the Noddies, the Gulls, and the Petrels. Of these little can be here said, because, in the first place, not much has been noted with respect to their habits; and also, because there is little, if anything, in which they differ from the Sea-birds which are found all over the world, and which have been described in so many books of travel and natural history.

The Roseate Tern is said to be very common on the islets and shoals of Cargados in the Indian Ocean; the Greater Tern is found in great numbers in the smaller islands, as Aldabra, Tromelin, Juan da Nova and others; the Panayan Tern appears to be very rare in Madagascar waters; while the Noddy is said to come by thousands to roost in the cliffs and rocks of Réunion at certain seasons. Mr. Cory informs me that "one of the Terns (grey with a black head and coral feet and bill) is very common in Imèrina. There are great numbers even in a pond close to Ambôhimànga, where I have shot them." It is very common also all round the Itasy lake (50 miles west of the Capital), where it is known by the name of *Kdonkàona*, a word which means "a howl, yelp, or cry." All these birds are known by the Sakalava under the general name of *Sambè*, which M. Pollen affirms to be the same as the Malagasy word *sambo* (ship), and refers to their being seen, like ships, far out at sea. I am, however, rather disposed to think that the two words are *not* identical, but I have no other solution to offer.

As will be seen by the Tabular list, about a dozen Gulls and nine species of Petrel have been met with in the seas surrounding Madagascar, but it is difficult to give their exact number and names without a much more intimate knowledge of the coast-line of the whole island than is yet available to naturalists. The Dusky-headed Gull is found not only on the coast, but far in the interior, as on the Lake Alaotra in Antsihanaka, and on the River Mangòky. Another Gull has been shot

in the neighbourhood of Antananarivo. The common name for the Gulls which visit Itasy is *Hôlokôloka*, descriptive, some say, of the peculiar cry they utter, although it may denote their habits, as it means "crafty, trickish, guileful."

IV.—The last Order of birds (now living), that of the Divers, will not detain us any longer than the one just noticed, as it only contains one species found in Madagascar. This is a form of Lesser Grebe or Dabchick, which appears to be almost identical with the bird found over Europe, Africa and part of Asia. It is very common wherever there are pools or any piece of fresh water, where it may be seen swimming, diving down at any alarm, to reappear in a minute or two at a considerable distance. It is known to the Malagasy by the name of *Vivy*, which is probably imitative of its plaintive little cry. (*Dendrocygna viduata* is also known by this name in the north-west of the island.) This Grebe is also known by the name of *Vôrombôatavo*, i.e., 'Gourd-bird,' but why I cannot say.

V.—Our review of the birds indigenous to Madagascar, and still to be found throughout its forests and plains and on its rivers and sea-coasts, is now completed; but a few words may be added as to two or three species of bird now extinct, but which, at no very distant period, scoured its plains, and must have been very prominent and striking members of its Avi-fauna.

It is a well-known fact that the southern continents and large islands of the earth all are or have been the home of very large and curious birds. Thus we have the Ostrich in South Africa, the Rhea in South America, the Cassowary and Emu in Australia and the Papuan Islands, and the Apteryx in New Zealand, all still living birds; while in New Zealand also there was the enormous Moa or Dinornis, only extinct within the past century; in the Mascarene Islands there were five species of Dodo and some large Rails, only extinct since the advent of Europeans (in 1505); and it is now clear that Madagascar also, the largest island, save Australia, south of the equator, had its large birds allied to the Ostrich and the extinct Moa.

It was in the year 1850 that a very large bird's egg and some fragments of bones were first discovered by a M. Abadie in the southern part of Madagascar, and excited great interest among naturalists. Subsequently other eggs were found, and in 1868, M. Grandidier discovered in the marshy soil at Ambôlintsàtrana, on the west coast of Madagascar, the tibia, femur, toe-bones and some vertebræ of a bird, corresponding in size with the fragments previously obtained, and evidently, by their proximity, belonging to the bird which laid these great eggs. And it became clear from the shape and structure of these portions of the skeleton that they were parts of a bird allied to the Ostrich, and still more nearly to the Moa or Dinornis of New Zealand. The egg is remarkable as far exceeding in size any previously known egg, for the longer axis is no less than  $12\frac{1}{4}$  inches, with a smaller axis of  $9\frac{3}{8}$  inches; while the size of the largest known Ostrich egg is only  $6\frac{1}{4}$  inches by 5 inches. In capacity this Madagascar egg is therefore equal to six Ostrich eggs and to 150 average sized Hen's eggs. This egg, however, does not appear to have been laid by the largest of known birds, living

or extinct, for the leg and thigh-bones are not so long as those of the New Zealand bird, which was, so far as our present information goes, the most gigantic of all feathered creatures.\*

This Madagascar bird, which was named by Isidore Geoffroy Saint-Hilaire *Æpyornis*, appears to have been about as large as the largest Ostrich, but with extremely massive leg- and toe-bones, so that it was probably endowed with great speed on foot, but, like all the Struthionies, would be incapable of flight. No complete skeleton has yet been discovered, and we still know nothing of the form of the crania and the vertebræ of the neck. Enough, however, is known from the other bones to enable it to be said that the *Æpyornis maximus* was allied to the *Dinornis* and the *Apteryx*, "although it is distinguished from them by profound differences of internal organization, amongst others by the presence of highly developed air-passages, which allowed the air to penetrate into the thigh-bones."

M. Grandidier also discovered the bones of two other and smaller species of *Æpyornis*, one the height of a Cassowary, and the other as large as a Bustard, so it is probable that there were several species of this ancient genus of bird once living in Madagascar. Most of the eggs of the largest species have been found in a small district in the extreme south-east corner of the island, between the River Mandrèry and a promontory called Andrahòmby. In this district fragments of the eggs are said to be easily obtained, but perfect eggs are very rare and command a large price in Europe. Another specimen, described by Mr. G. Rowley, was found at Mānanjāra, on the south-east coast, at a depth of 45 feet, in a hill of ferruginous clay, by some natives who were digging for iron ore. As these remains have thus been discovered at three different points on the southern coasts of Madagascar, there can be little doubt that systematic exploration would reveal much more numerous relics of this big bird, as well as of its eggs.† Within the last few years careful examination of the beds of dried-up lakes and ponds in Mauritius has brought to light a large number of relics of the Dodo and other extinct birds of the Mascarene group of islands; and doubtless careful research in a similar direction in Madagascar would reveal the existence not only of other species of *Æpyornis*, but perhaps also of the Dodo or forms allied to it, as well as of other ancient kinds of bird, which were probably not confined to the smaller islands of the great Madagascar group, but had their allies also in the largest island.

It is not at present possible to say exactly at what period these great Malagasy birds became extinct, but M. Grandidier believes that they were living at a very recent epoch, since their remains are found in the latest formations, whose development indeed continues up to the present day, and that therefore they have been living during the period when man has inhabited Madagascar. Of course there are no traditions among the Hova throwing any light upon the subject, and our know-

\* So far as the evidence at present available allows us to judge, the Madagascar bird did not exceed 6 ft. 6 in. in height, while the New Zealand *Dinornis* varied from 8 ft. 2 in. to 9 ft. 10 in.

† Since the above was written, the bones of the *Æpyornis* have been discovered, together with those of an extinct species of Hippopotamus, at Antsirabé, in the Vākinankāratra district, in Central Madagascar; see "Natural History Notes" at the end of this number.



ledge of the southernmost tribes of the island is yet almost *nil*. Possibly, when we become better acquainted with these peoples, something may be learned from them to throw light on the question. Probably, like the Dodo in Mauritius, and the Moa in New Zealand, human agency has only completed their extinction, a process which most likely had been already going on through the slow influence of climatic and other changes.

In the opinion of some writers, the strange stories in the *Arabian Nights* about an enormous bird called the *Roc* or *Rukh*, which was able to take up an elephant in its talons, and which darkened the air as it soared aloft—with other like marvels—took their rise, or were suggested, by the existence of these immense *Æpyornis* eggs from Madagascar. It is well known that the Arabs have had intercourse with the island from very ancient times, and it is possible that having seen an egg that so largely exceeded that of any other bird, they concluded that the bird laying such an egg must have been able to do the wonderful things ascribed to it in their popular stories. As may be seen, however, by looking at the structure of its feet, the *Æpyornis* was not only incapable of holding even a mouse in its claws, but it probably could never have lifted itself a yard from the ground. Yet in the absence of any knowledge of the bird itself, the conclusions the Arabs drew from the size of the egg were not very absurd, especially in an age when all the unknown was marvellous, and when so much that was both wonderful and true was being constantly discovered by their daring navigators and explorers.

VI.—In order to give completeness to this dissertation on the Ornithology of Madagascar, I will in this section give a few particulars about the birds which have been introduced by human agency and domesticated in the island, as well as some of the proverbs and popular notions respecting them. The most important and valuable additions thus made to the indigenous Avi-fauna of the country are the Fowl, the Duck, the Goose, the Turkey, and the Muscovy Duck. The last of these is the least common, although it is still tolerably plentiful, but all the others are very widely spread over the country and form most valuable additions to its food supply. Almost every cottage in the island has its fowls, and in the interior provinces large quantities of ducks and geese are reared, not only for home consumption, but also for sending down to the coast and for sale to the foreign shipping.

The Muscovy Duck is called by the Malagasy *Dôkotra*, a corruption of the English word 'duck,' and appears to thrive well here, although, as already remarked, it is not nearly so plentiful as the commoner species.

The Turkey is extensively reared in Madagascar, and is very excellent and very cheap.\* Its native name of *Vôrontsilôza* seems rather odd; it is literally the 'Not-fierce-bird,' and probably has come about in the following way: when first introduced, its loud gobble and bright red crest and wattles alarmed the people, as belonging to a savage bird, a veritable *vôron-dôza*, but it was soon seen that there was nothing much to be feared, and so its name became *Vôrontsilôza*, 'the bird which is *not* savage,' after all. So one of the native proverbs says, "*Vorontsilôza* : not fierce (*lôza*); still, when taken, fierce enough." Another says, "Don't brag like a Turkey: whistled for, and then spreading out its feathers."

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\* Its price in Antananarivo is now (1892) from tenpence to two shillings.

And another describes its appearance and habits thus: "Don't act like the Turkey: who but he, though not a girl, drags his clothing on the ground? who but he, though there's no bull-fight, hoots and shouts? who but he, though not a matron, wears a coral necklace? who but he, though not a drum, makes a terrible din?"

The Goose is also very plentiful in most parts of Madagascar, and is also cheap and good.\* It is known in Imerina by the name of *Vòrombè*, 'Big-bird,' on account of its size, and is also called *Gisa*, from the English 'geese' (not the singular, 'goose,' but the plural). Among the Sihanaka the rearing of geese and ducks is an occupation only second in importance to the keeping of cattle. They are kept in immense numbers, and geese, either alive or killed, are always presented as a mark of respect to strangers. Goose-quills for pens form part of the tribute paid by the Sihanaka to the Sovereign. Two or three proverbs may be here quoted; e.g., "Big-bird (*Vòrombè*), little egg;" "A Gander eating growing rice: the one taking other folks' property makes the loudest noise;" "Giving one's self airs, like a Goose not fit for eating." This bird forms a favourite dish with the lower-class Malagasy at various times of festivity or family gatherings, and its value, as compared with a Fowl, is noticed in the following: "As for killing a Fowl, that's all right; but to kill a Goose, that makes one faint" (as by far too great a stretch of hospitality).

The Duck is hardly less plentiful in the interior of Madagascar than are hens and chickens, and in the marshy districts very large flocks of them are reared. It is called in Imerina *Vòrombazàha*, i.e., 'Foreigner's bird,' and so is probably of comparatively recent introduction. In other parts of the country it is known by the names of *Idridràky* and *Gàngàna*, the first certainly, and the latter probably, imitative of its quack. The Malagasy breed a good many hybrids from the Muscovy Duck and the common Duck: these are termed *Sàrindòkotra*, i.e. 'Imitation-Ducks.' The following proverbs refer to this bird: "Thin and flat-mouthed, like a Duck;" "Do like the Duck: the drake who leads has the least to say;" "It is the Ducks that make a noise, so the frogs are alarmed;" "If turning head over heels is to be done, the Duck will get something first;" "Like a Duck lying on its back, its feet are flat and thin; bending down, its beak is flat and thin."

Last, but by no means least in importance and value to the Malagasy, is the domestic Fowl, reared everywhere and called by the people *Akóho*, a word most probably onomatopoeitic in origin, although it may be more immediately connected with the Swahili *kuku*. It was no doubt introduced into the country in very early times, and the numerous words, verbal forms, and compound words derived from the name of the bird, as well as the innumerable references to it in native folk-lore, legends, oratory and proverbs, all testify to the prominent place the Fowl holds in the estimation of the people. In the fullest collection of Malagasy proverbs yet published there are more than ninety which refer to Fowls—whether as cocks, hens, or chickens—and there are several also about eggs, from all of which a few of the most noteworthy will now be quoted.

First then as to chickens; a bit of natural theology is seen in the following: "A chicken drinking water; it observes what is on the earth,

\* Present price in Antananarivo about eightpence to eighteenpence.

but also looks up to heaven." The anxiety of a hen who has brought up a brood of ducklings is thus noticed: "A hen which has hatched ducklings: if she clucks after them, they are not hers; if she leaves them alone, they are a troublesome family." Others will explain themselves: "A chicken fallen into a ditch: it struggles to get out, but can't; it calls out, but its voice is weak; it stops there, it is in danger of the wild-cat." "Chickens having rice thrown to them: they are both frightened and glad." "We are not chickens hatched in the winter, down-hearted and weak-winged, but goslings hatched in the summer [when food is more plentiful], and therefore strong and lusty."

Of course there are many references to the cock and to cock-crowing, as: "A cock crowing in the market: not [a proof of] strength, but regret for the village he has left." "Many cocks in the compound: everyone wants to crow." "A cock's spur: it's sharp enough, but it's low down." "Honoured as the father of the brood, and yet picking up scraps under the rice-pounder." "The cock regrets he has wings, for he is caught by the wild-cat."

Promises not borne out by performances are spoken of in these: "Don't do like the Fowl's early rising: he wakes early enough, but is still south of the hearth" (that is, he is still in that part of the native house where the fowls roost, he has not gone out to do any work). So again: "Up early, yet not gone far, like a Fowl." His place in the house again is mentioned in this: "It is not the Fowl's folly that he lives in the corner, for that is his share of the dwelling." Here is a piece of good advice about married life: "Let wedlock be like the Fowl's clothing: only parted with at death." Native superstitions about treading on the tomb of one of the Vazimba (the supposed aboriginal inhabitants of Imerina) are thus referred to: "The Vazimba has been trampled on, so the Fowl's head must be cut off," that is, as a sacrifice. Taking much trouble for small results is thus spoken of: "It's absurd to seek for an axe when you only want to carve a Fowl." Our last specimen needs no remark: "Like a cock's tail: the best of him is behind."

Here is a fable explaining the reason why Fowls scratch the earth and why Kites scream as they fly: "A Fowl borrowed a needle from a Kite, but the needle being lost, the Kite said, 'I am not going to put up with your losing my needle.' So that is why the Fowl scratches the ground, and why the Kite carries away the chickens instead of his needle. And so when it is spring-time the Kite screams out *Filokòhokòho*' (*filo*, a needle, *akòho*, a Fowl), calling on the Fowl for his lost needle."

Here are two or three proverbs about eggs, mostly referring to those of the Fowl: "Eggs can't fight with stones;" "Eggs not sat on won't become chickens;" "Words are like eggs: when hatched, they have wings." There are several popular superstitions about eggs; thus, for a hen to lay either a very large or a very small egg is considered to be ominous of evil, or of good; and so also an egg laid without a proper shell (*atòdimalèmy*) is thought to forbode evil.

Two or three quotations from the proverbs referring to birds generally may conclude this section; thus: "Don't cry for a bird all but obtained;" "Don't reckon on (or cry for) a bird still in the air;" "Words are carried by a flying bird" (*cf.* Eccles. x. 20); "The bird may forget the snare, but the snare does not forget the bird."

VII.—Before finishing this paper, I will, in order to render it as complete as practicable, quote once more from Mr. Alfred R. Wallace, and give a brief section summing up what may be concluded from the Madagascar Avi-fauna, considered as a whole, as described in *Island Life*, 2nd ed., ch. xix., pp. 422-426. This section is entitled,

*"The Birds of Madagascar as indicating a supposed Lemurian continent."*—Having thus shown how the distribution of the land mammalia and reptiles of Madagascar may be well explained by the supposition of a union with Africa before the greater part of its existing fauna had reached it, we have now to consider whether, as some ornithologists think, the distribution and affinities of the birds present an insuperable objection to this view, and require the adoption of a hypothetical continent—Lemuria—extending from Madagascar to Ceylon and the Malay Islands.

"There are about one hundred and fifty land-birds known from the island of Madagascar, of which a hundred and twenty-seven are peculiar; and about half of these peculiar species belong to peculiar genera, many of which are extremely isolated, so that it is often difficult to class them in any of the recognized families, or to determine their affinities to any living birds. Among the other moiety, belonging to known genera, we find fifteen which have undoubted African affinities, while five or six are as decidedly Oriental, the genera or nearest allied species being found in India or the Malay Islands. It is on the presence of these peculiar Indian types that Dr. Hartlaub, in his work on the *Birds of Madagascar and the Adjacent Islands*, lays great stress, as proving the former existence of 'Lemuria;' while he considers the absence of such peculiar African families as the plantain-eaters, glossy-starlings, ox-peckers, barbets, honey-guides, hornbills, and bustards—besides a host of peculiar African genera—as sufficiently disproving the statement in my *Geographical Distribution of Animals* that Madagascar is 'more nearly related to the Ethiopian than to any other region,' and that its fauna was evidently 'mainly derived from Africa.'

"But the absence of the numerous peculiar groups of African birds is so exactly parallel to the same phenomenon among mammals, that we are justified in imputing it to the same cause, the more especially as some of the very groups that are wanting—the plantain-eaters and the trogons, for example—are actually known to have inhabited Europe along with the large mammalia which subsequently migrated to Africa. As to the peculiarly Eastern genera—such as *Copsychus* and *Hypsipetes*, with a *Dicrurus*, *Ploceus*, a *Cisticola*, and a *Scops*, all closely allied to Indian or Malayan species—although very striking to the ornithologist, they certainly do not outweigh the fourteen African genera found in Madagascar. Their presence may, moreover, be accounted for more satisfactorily than by means of an ancient Lemurian continent, which, even if granted, would not explain the very facts adduced in support of it.

"Let us first prove this latter statement.

X "The supposed 'Lemuria' must have existed, if at all, at so remote a period that the higher animals did not then inhabit either Africa or Southern Asia, and it must have become partially or wholly submerged before they reached those countries; otherwise we should find in Mada-

gascar many other animals besides Lemurs, Insectivora, and Viverridæ, especially such active arboreal creatures as monkeys and squirrels, such hardy grazers as deer and antelopes, or such wide-ranging carnivores as foxes and bears. This obliges us to date the disappearance of the hypothetical continent about the earlier part of the Miocene epoch at latest, for during the latter part of that period we know that such animals existed in abundance in every part of the great northern continents wherever we have found organic remains. But the Oriental birds in Madagascar, by whose presence Dr. Hartlaub upholds the theory of a Lemuria, are slightly modified forms of *existing Indian genera*, or sometimes, as Dr. Hartlaub himself points out, *species hardly distinguishable from those of India*. Now all the evidence at our command leads us to conclude that, even if these genera and species were in existence in the early Miocene period, they must have had a widely different distribution from what they have now. Along with so many African and Indian genera of mammals they then probably inhabited Europe, which at that epoch enjoyed a subtropical climate; and this is rendered almost certain by the discovery in the Miocene of France of fossil remains of trogons and jungle-fowl. If, then, these Indian birds date back to the very period during which alone Lemuria could have existed, that continent was quite unnecessary for their introduction into Madagascar, as they could have followed the same track as the mammalia of Miocene Europe and Asia; while if, as I maintain, they are of more recent date, then Lemuria had ceased to exist, and could not have been the means of their introduction.

( "Submerged Islands between Madagascar and India.—Looking at the accompanying map of the Indian Ocean, we see that between Madagascar and India there are now extensive shoals and coral-reefs, such as are usually held to indicate subsidence; and we may therefore fairly postulate the former existence here of several large islands, some of them not much inferior to Madagascar itself. These reefs are all separated from each other by very deep sea, much deeper than that which divides Madagascar from Africa, and we have therefore no reason to imagine their former union. But they would nevertheless greatly facilitate the introduction of Indian birds into the Mascarene Islands and Madagascar; and these facilities existing, such an immigration would be sure to take place, just so surely as American birds have entered the Galapagos and Juan Fernandez, as European birds now reach the Azores, and as Australian birds reach such a distant island as New Zealand. This would take place the more certainly because the Indian Ocean is a region of violent periodical storms at the changes of the monsoons, and we have seen in the case of the Azores and Bermuda how important a factor this is in determining the transport of birds across the ocean.


"The final disappearance of these now sunken islands does not, in all probability, date back to a very remote epoch; and this exactly accords with the fact that some of the birds, as well as the fruit-bats of the genus *Pteropus*, are very closely allied to Indian species, if not actually identical, others being distinct species of the same genera. The fact that not one closely allied species or even genus of Indian or Malayan mammals is found in Madagascar sufficiently proves that it is no land-connection

that has brought about this small infusion of Indian birds and bats; while we have sufficiently shown that, when we go back to remote geological times, no land-connection in this direction was necessary to explain the phenomena of the distribution of the Lemurs and Insectivora. A land-connection with *some* continent was undoubtedly necessary, or there would have been no mammalia at all in Madagascar; and the nature of its fauna on the whole, no less than the moderate depth of the intervening strait and the comparative approximation of the opposite shores, clearly indicates that the connection was with Africa."

I have now concluded the task I marked out for myself in commencing this paper. It has extended considerably beyond the limits I had supposed would be required when first planning it out, and much more information than I had anticipated has proved available as it was proceeded with, section after section. At the same time, no one can be more sensible than I am myself of the numerous imperfections and, probably, mistakes that no doubt may be found in the preceding pages. My apology must be that this is the first attempt in English literature to give anything like a complete sketch of Madagascar Ornithology, and first attempts must always be full of imperfections and mistakes. Possibly some of my explanations of the native names will be thought far-fetched and untenable, and some translations of native proverbs may be considered rather free. On these points, as well as regards all matters of fact, I shall welcome all kindly criticism and fuller information. The subject is such a wide one that a very great deal yet remains to be done with regard to our knowledge of almost every bird inhabiting the island; and some contributions to a fuller acquaintance with the subject might be made by every one who even only occasionally travels about the country, or indeed will note down what he sees day after day, in whatever part of Madagascar he may reside.

There only remains the pleasant duty of thanking several friends interested in ornithology who have kindly helped me during the printing of these papers by looking through the MS. or the proofs, and by giving me the benefit of their criticisms, suggestions and additional information. I owe much on these points to the Rev. C. P. Cory, B.A., Mr. William Wilson, the Rev. R. Baron, F.L.S., F.G.S., Mr. J. G. Mackay, and the Rev. G. K. Kestell-Cornish, M.A. I have also to thank the Right Rev. Bishop Kestell-Cornish, D.D., for kindly lending me his copy of MM. Pollen and Van Dam's valuable work on Malagasy Birds, and His Excellency the (late) French Resident-General, for the loan of several volumes of M. Grandidier's great work on Madagascar. From both these sources it will be seen that I have derived a great deal of information, indeed this paper could not have been prepared without the help of these magnificent publications. Grateful thanks are also due from me to M. Grandidier for the trouble he has taken to reply to my numerous enquiries about various birds, and for other help most readily and cheerfully given. I only hope that some of my readers may derive, in reading these papers, even a tithe of the pleasure it has given me to prepare and to write them.

JAMES SIBREE. (ED.)



APPENDIX TO CHAPTER VI.—TABULAR ARRANGEMENT  
OF MADAGASCAR BIRDS: ORDERS VIII.—XIII.

ORDER VIII.—ANSERES: WILD-FOWL.

FAMILY I.—PALAMEDEIÆ: SCREAMERS. *None in Madagascar.*

FAMILY II.—ANATIDÆ: DUCKS.

English Name	Scientific Name	Howa or General Name	Provincial Malagasy Names
Green-winged Teal	<i>Anas MELLERI*</i> (Sclater)	Angäka	Akäkamainty ( <i>Bs.</i> ), Akäky ( <i>T.</i> )
Red-billed Wild Duck	<i>Anas erythrorhynchos</i> (Gm.)	Fötsiëlatra	Rahäky, Sädakely, Färalämbotra, Filämatra, Lövilövy ( <i>Sik.</i> )
Lesser Green-winged Teal	<i>Anas BERNIERI</i> (Verr.)	_____	Hakë ( <i>T., N.B.</i> )
Lesser Green-winged Teal	<i>Nettion auritus</i> (Bodd.)	Tätatsiry, Vöronandriana	Märoampinga ( <i>Ba.</i> ), Söafify ( <i>So.</i> ), Vöronköika, Vöron-tsära ( <i>Bm.</i> )
Lesser Green-winged Teal	<i>Dendrocygna viduata</i> (L.)	Tsiriry; and in many dialects	Vivÿ ( <i>N.S.</i> )
Lesser Green-winged Teal	<i>Dendrocygna major</i> (Jerd.)	Tahia ( <i>T., N.B.</i> )	Etsöa ( <i>So.</i> )
Lesser Green-winged Teal	<i>Sarcidornis africana</i> (Eyt.)	Arösy, Ara	Angöngo ( <i>Bs., T.</i> ), Ongöngo ( <i>Ba.</i> ), Sivöngo ( <i>N.S.</i> ), Käboka, Kävoko, Rasäna ( <i>So.</i> )
Lesser Green-winged Teal	<i>Fuligula nyroca</i>	_____	Ony, Onotra ( <i>Bm.</i> ), Hönjo ( <i>Sik.</i> )
Lesser Green-winged Teal	<i>Thalassornis leuconota</i> (Gm.)	Tafiotra, Andrandra, Bëlöha	Mahërilöha ( <i>N.S.</i> ), Ménamölöty ( <i>N.B.</i> ), Danämona, Tafiotra, Adälädäla ( <i>Sik.</i> )
Lesser Green-winged Teal	<i>Querquedula hottentota</i> (Smith)	Sädakely, Kintokely, Fötsiëlatra	Söafify ( <i>N.S.</i> ), Tätaka ( <i>So.</i> ), Rasäna ( <i>N.B.</i> ), Kizäzaka ( <i>Sik.</i> )

ORDER IX.—STEGANOPODES: PELICANS.

FAMILY I.—FREGATIDÆ: FRIGATE-BIRDS.

Red-tailed Frigatebird	<i>Fregata minor</i>	_____	_____
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FAMILY II.—PHAETHONTIDÆ: TROPIC-BIRDS.

White-tailed Tropicbird	<i>Phaethon candidus</i> (Briss.)	_____	_____
White-tailed Tropicbird	<i>Phaethon rubricauda</i>	_____	_____

As in the previous chapters of this paper, the names in small capitals show those genera species of birds which are peculiar to Madagascar. The contractions after provincial names show the tribes among whom such names are in use, see ANNUAL XIII., p. 85. This name, a translation of the scientific one, is apparently a misnomer, for Mr. Cory "It has not a white back, and I have not seen a white-backed Duck in the island,"

## FAMILY III.—PELECANIDÆ: PELICANS.

English Name	Scientific Name	Hova or General Name	Provincial Malagasy N
Reddish Pelican	<i>Pelecanus rufescens</i> (Gm.)	_____	_____
Booby Gannet	<i>Sula piscator</i> (L.)	_____	_____
Black-bellied Dart- er or Snake-neck	<i>Plotus melanogaster</i> (Gm.)	Manàrana, Fi- tsindrona	Ramangàra, Tròzona Ba., T., Tm.), Rèn (N.S.)
African Cormorant or Darter	<i>Phalacrocorax africanus</i> (Gm.)	Arondövy	Vòrompisàky (Bs., Ba.) mèfakangätv, Ramàn (T.), Rénivoàvy (N.S.), Sakaizamboàvy, Vòron



## ORDER X.—GAVIÆ: SEA-BIRDS.

## FAMILY I.—LARIDÆ: GULLS.

SUB-FAMILY I.—RHYNCHOPINÆ: SCISSOR-BILLS. None in Madagascar.

## SUB-FAMILY II.—STERNINÆ: TERNS.

Caspian Tern	<i>Sterna caspia</i> (Pall.)	_____	Sambè
Greater Tern	<i>Sterna maxima</i> (Lich.)	_____	Sambè
Horsefield's Tern	<i>Sterna media</i> (Rüpp.)	_____	Sambè
Roseate Tern	<i>Sterna Dougalli</i> (Mont.)	_____	Sambè
Panayan Tern	<i>Sterna anæsthesia</i>	_____	Sambè
Hybrid Tern	<i>Hydrochelidon hybrida</i>	_____	Sambè
White Noddy	<i>Gygis candida</i> (Sparm.)	_____	Sambè
Thin-billed Noddy	<i>Anous tenuirostris</i> (Temm.)	_____	Sambè
Stupid Noddy	<i>Anous stolidus</i> (L.)	_____	Sambè

## SUB-FAMILY III.—LARINÆ: TRUE GULLS.

Dusky-headed Gull	<i>Larus phæocephalus</i>	_____	Hòlokòloka
Antarctic Skua	<i>Stercorarius antarcticus</i> (Less.)	_____	Hòlokòloka

## FAMILY II.—DROMATIDÆ: CRAB-PLOVERS.

Crab-Plover	<i>Dromas ardeola</i> (Payk)	_____	Hòlokòloka
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## FAMILY III.—PROCELLARIIDÆ: PETRELS.

Sooty Petrel	<i>Procellaria fuliginosa</i> (Banks)	_____	_____
Giant Petrel	<i>Ossifraga gigantea</i> (Gm.)	_____	_____
Blue Petrel	<i>Prion vittata</i> (Gm.)	_____	_____
Black-bellied Petrel	<i>Ptergetta melanogastra</i>	_____	_____
Oceanic Petrel	<i>Oceanites oceanicus</i>	_____	_____
Green-billed Albatross	<i>Diomedea chlororhyncha</i> (Gm.)	_____	_____
Black-browed Albatross	<i>Diomedea melanophrys</i> (Boié)	_____	_____
Green-billed Shearwater	<i>Puffinus chlororhynchus</i> (Less.)	_____	_____
Dusky Shearwater	<i>Puffinus obscurus</i> (Gm.)	_____	_____





ORDER XI.—PYGPODES : DIVERS.

FAMILY I.—ALCIDÆ : AUKS *None in Madagascar.*

FAMILY II.—COLYMBINÆ : DIVERS. *do. do.*

FAMILY III.—PODICIPITIDÆ : GREBES.

English Name	Scientific Name	Howa or General Name	Provincial Malagasy Names
Pelzel's Grebe	<i>Tachybaptus fluviatilis</i> PELZELNI (Hartl.)	Vivỳ, and so in most dialects	Vòrombòatavo (T.), Vivỳ (N.B.)

ORDER XII.—IMPENNES : PENGUINS. *None in Madagascar.*

ORDER XIII.—CRYPTURI : TINAMOUS. *do. do.*

DIVISION II.—RATITE : STRUTHIOUS BIRDS.

FAMILY I.—STRUTHIONES : OSTRICHES.

Great Æpyornis	ÆPYORNIS MAXIMUS (I. G. St.-Hil.)	Extinct	The eggs of these birds are called by the Tanòsy <i>Vòafio</i> .
Grandidier's Æpyornis	ÆPYORNIS GRANDIDIERI (Rowley)	Extinct	

ADDENDA ET CORRIGENDA.—Mr. Cory has pointed out to me that there is certainly some inaccuracy in the summary, at p. 78, ANNUAL XIII., of the principal birds found in the interior, perhaps arising from slips in my translation of the French, or from the want of exact correspondence in meaning between some English and French bird-names. Thus, for "peewits" and "woodcocks," Mr. Cory suggests "sandpipers" and "snipe." "Ox-birds," again, appear to be the same as the "egrets;" perhaps "egrets" and "herons" would convey the sense more exactly.

At page 79, Mr. Cory notes in reference to M. Grandidier's statement as to the "tendency to albinism" in the western birds, "I have seen a light pink 'cardinal' or *Fidy* in Antsihànaka."

At page 91, a mistake has crept in in speaking of the size of the Madagascar Bee-eater; it is certainly *not* "one of the largest forest birds;" it should have been said that, including the very long tail feathers, it is nearly a foot long. The body is no larger than that of a Thrush, besides, it is not a forest bird at all.

During my recent furlough in England, these papers on Madagascar Birds have been reproduced, with some slight corrections and many additions (in Chs. I. and II.), in the leading ornithological journal, the *Ibis* (April 1891—April 1892). In these articles the Tabular lists have had the benefit of the revision, according to the latest scientific research, of Dr. P. L. Sclater, F.R.S., and other eminent naturalists. I propose to give a corrected list of the Birds in a future number of the ANNUAL.—J.S.

F. Lanzano

## X TWELVE HUNDRED MILES IN A PALANQUIN.

HAVING been appointed by the Imèrina District Committee of the London Missionary Society to pay a visit to the churches and schools scattered along the north-east and north-west coasts of the island, I started from Antananarivo on May 26th, 1891, going by way of the Antsihanaka province to Fénoarivo, a town on the east coast about 50 miles north of Tamatave. As the road from the Capital to Fénoarivo has been traversed by several Europeans, and has been more than once described, I need not dwell at any length on this part of the journey.\*

X There is much more forest country between Antsihanaka and Fénoarivo than between Antananarivo and Andôvoranto, simply because on the latter route the trees have been more largely felled or burned; and yet although it is only nine years since I last passed this way, terrible havoc has been made in the meantime by axe and fire. Formerly, there can be no doubt, the whole of the eastern slopes of the island for the greater part of its length were covered right down to the coast by dense forest, of which the numerous detached outliers are the still extant witnesses and remnants; but, except in the north-east, this great belt of vegetation no longer reaches the sea. The fact is, the forest on the east side of the island is not merely being thinned (which in itself would be no evil), but is being absolutely laid waste by the natives, who, like two lines of despoilers, stretching, one on the east and one on the west side of it, for many hundreds of miles, commit their depredations the whole year through. Probably more than one half of the original forest has been already cut or burned down, and in a few generations, at the present rate of destruction, this still magnificent mass of vegetation will have been swept out of existence.

The plants found in the forest and at other parts of the road to Fénoarivo are mostly the same as those on the road from the Capital to Andovoranto; there are, however, a few odd ones which are not to be found on the latter route, notably a very beautiful scarlet balsam with a very large spur. It proves to be a new species. What struck me most, however, in regard to the flora of this part of the country, was the comparative paucity of Traveller's-trees. They are nowhere to be found in such abundance as they are, for instance, about Mahèla on the road to Tamatave. The plant (*Maranta arundinacea*, L.) which yields the genuine arrowroot exists in the forest. It is said to be a native of America, but it is now at any rate quite wild here.

It seems that the road from Antsihanaka to Fénoarivo is becoming increasingly dangerous from the presence of highway robbers. In one of the solitary forest glens we saw the blood of a man who, two days before, had been attacked, robbed of his load of cloth, and barbarously murdered. The villains escaped with their booty, no attempt whatever having been made even to trace them.

\* I may here say once for all that the present paper only professes to be of a general character. A full report of the churches and schools has been sent to the Mission House in London, and I hope still to write a paper on the geology, and probably one also on the botany, of the region traversed.

The road is much more difficult than that from Antananarivo to Tamatave, being in some places nigh impassable, and the bridges, where such exist, are of the worst possible kind. One of these bridges, consisting of the round trunk of a young tree, was so slippery that, when in the middle of it, I slipped off, hurt my shin, and fell on my back into the thick mud below. This happened at a rather unfortunate time, for I had just put on a clean suit of white clothes before entering Fenoarivo.

When we were nearing the coast, we saw a large serpent, an *Akôma*, which some natives had caught, and which was offered us for sale. It was the largest I had ever seen, being a little over eight feet long and 14 inches in circumference. I meant to have bought it, but unfortunately it got off in the night.

After a day and a half's stay in Fenoarivo and examining the schools connected with the three neighbouring towns of Fenoarivo, Isâhavôla, and Ivôhimâsina, as well as doing what other missionary work I could, we commenced the journey along the coast to Antômboka, or, as the Antankârana pronounce it, Antombokô. The road for the first hour is on the sand of the sea-shore; it next follows for two or three miles the edge of a small crag, twelve to twenty feet high, of dark brown layers of a soft sand-rock, overlaid by a thin covering of white sand. This sand-rock is alluvial and apparently composed of the detritus of dolerite, of which all the rock here seems to consist, and which extends some miles inland to the west, running under the sea to an unknown distance to the east. Large blocks of this sand-rock have been torn off by the waves and lie at the foot of the crag. After this, the road again follows the sand of the sea-shore as far as Tampôlo, a village of fifteen or sixteen houses. Leaving Tampolo, the path winds about under the trees and bushes as far as Mânîngôry, a village on the northern bank of the river of the same name. This river, it may be noted, runs down from Lake Alaotra, being increased in volume, like all the rivers on the east coast, by numerous affluents on the way. Between Maningory and Fenoarivo lagoons, though of no great extent, exist, notably that at Tampolo, which is not improbably a couple of miles in length. The space between the sea and the neighbouring low range of hills, some three or four miles to the east, is occupied by marshy land, on which Pandani and Traveller's-trees are the most conspicuous plants. On the maps of Madagascar the village of Maningory, a place of about a dozen houses, is named Ambazâha, but no such village exists. The River Maningory is also wrongly spelled Manangoro. Several of these map-names were doubtless first given by those who had little knowledge of the language, or by those who, knowing the language, listened carelessly to the pronunciation of the name, or wrote it down more or less illegibly, hence they are not infrequently wrong. We shall find a few other instances of errors in spelling, etc., as we proceed on our journey, but it may be here noted that the large new French map is remarkably correct in nearly all its details. The River Maningory, though it has a narrow outlet into the sea, widens out behind the beach, where it is about half a mile across. It also sends out a lagoon northwards for a mile or so.

Leaving Maningory the path led us chiefly along the sand of the beach; we crossed by canoe the River Mânantsâtra, and slept at Fita-

arano, a village of some two dozen houses. The low wooded ranges of hills, some distance inland further south, begin from this point gradually to approach the shore, and the hill tops of St. Marie Island come into view. The rock for several hundred miles along the coast, which also runs for an unknown distance under the sea, as it may often be seen rising above the surface, is dolerite, a coarse-grained variety of basaltic lava, the underlying gneiss, however, cropping out in many places.

Two hours and a half's journey from Fitadrano, mostly along the beach, brings us to the small village of Sahaka. From Sahaka to Isoanierana the road passes partly along the sea-shore, and partly over forest-covered mountain spurs jutting into the sea, the scenery becoming remarkably beautiful, more so in fact than that of any other portion of the north-east, north, or north-west coasts. Soanierana, a town of some sixty or seventy houses, with a Governor of 12 honours, lies in a snug hollow on the coast. Soanierana is the real name of the town, though it is often spoken of as Isoamianina and Ivongo. Isoamianina, however, is really the name of the town a little further north, where the Hova Governor and garrison were formerly stationed, and hence the name is still kept up and used in government despatches even when Soanierana is meant. Ivongo (or, as the Betsimisiraka call it, Vongo) is the name of the province of which Soanierana is the capital. The rock along the shore here and for a few miles south is mica-schist, frequently crowded with long light-blue crystals of kyanite. The tree known as *Volombodipona*, from which ebony walking-sticks are made, is common here.

The journey from Soanierana to Antsiraka, a village of about a score of houses at the extreme point of the triangular headland running out towards the island of St. Marie, occupies about five or six hours, and, after crossing the River Marimbo in canoes, one passes through natural shrubbery or along the inner edge of woods running in long stretches parallel with the coast. This triangular headland consists entirely of a well-wooded, sandy and marshy flat, the hills being left in the background. A small lagoon runs from the western point of the promontory for a mile or two along the northern shore. Three and a half hours' travelling from Antsiraka along the sand or under *Filao* trees, which in certain places are very abundant, brings us to the River Fandrarazana, with a village of the same name consisting of three or four houses. Here there was a woman weaving out of doors. I was interested in the loom, a very primitive one, but nevertheless two or three stages in advance of that used by the Hova. The warp is raised a yard or so from the ground, the weaver sitting on a bench to her work, the healds and alternate threads of the weft being lifted up and down by means of treadles.

X The Fandrarazana is crossed by canoe, the river widening out above the mouth as usual. The road then passes through a mangrove swamp, the first of many along the north-eastern coast, and the odour from which (as is always the case in such swamps) is most pestilential. Crossing the River Manompana in a small canoe, we arrived at the village of the same name, which consists of thirty or forty houses. From here northwards the big forest comes down from the interior and reaches to the sea, in many places to the very water's edge, though patches of it

have here and there been felled and burned for a mile or two inland, the clearing being used by the Betsimisaraka as rice-grounds. On these rice-grounds small huts are erected in which one or two people remain night and day to scare away the birds when the rice is ripening. This they do by a series of strings attached to bamboo rattles placed in different parts of the field, as is the custom among the Tanàla and probably other tribes on the eastern side of the island, who depend on mountain-rice for their subsistence. The road next leads through forest and along the sand of the beach or under Pandanus, Filao, Barringtonia trees, etc., to the River Anové, which is crossed by canoe, and has a small village on each bank of four or five huts each. It may here be noted that the villages almost always take their names from that of the river on the banks of which they stand. Proceeding north we crossed by canoe the River Mânambâtô, which receives its name from the large blocks of gneiss lying at its mouth. Passing on beyond Mandrisy, where there is a considerable belt of flat land and numerous inlets of the sea fringed with fetid mangrove swamps, the next place of any importance we come to is Antânambê, a village of some forty or fifty houses, and from which timber is at present exported, the neighbouring part of the forest being, I believe, in the hands of a French company. A mile or two along the shore brings us to a small river, not marked on the maps, the Mavôv, to cross which the men had to wade up to the necks, holding the palanquin above their heads. Another river, the Vâhibê (not Vôhibê, as on the maps), is crossed in a canoe, and from this point the road mostly leaves the shore, which is rendered impassable chiefly by the large number of big blocks of lava (dolerite) at the water's edge. The path therefore leads through shrub and forest over a series of spurs which run down from the mountain range to the west. The scenery from the summit of some of these spurs is very fine indeed: to the east is the Indian Ocean, with numerous inlets and the three small islands of Hatâfana, and to the west are hills and mountains covered with dense forest. Sâhasôa, where we slept, but which is not marked on the maps, is a village of six or eight houses, and lies in a snug hollow between the hills and the sea, a little to the south of the River Mênatany.

From Sahasoa to Antserânambê (half-a-dozen houses) the road follows the beach, but occasionally surmounts a spur of the mountains. At one place you have to scramble over great rounded blocks of gneiss and lava, some of which are as large as cottages, or to surmount them by means of a ladder made of a notched pandanus or palm-stem, or to pass along rock ledges, a false step on which would be serious, so that the road here is somewhat dangerous, so much so in fact that one of the luggage bearers fairly gave in, and had to have help from his comrades. One or two basaltic dykes may here be seen to penetrate the gneiss on the shore.

Leaving Antseranambe the road passes up a steep mountain thickly covered with forest, but from this point the mountains recede from the coast to ten or twelve miles inland, leaving between them and the sea a low-lying stretch of grass land, probably 200 square miles in extent, with clumps of trees and bushes here and here. Passing through the forest above referred to, we found a plant, which had magnificent yellowish flowers, with extraordinarily long-tubed corollas, and which seemed to be an *Ixora*. It was apparently rare, for we saw but a single

specimen. The important town of Ambóhijānahary, or, as it is also called, Isoàvinarivo, is situated on this grass land, while the town which the Europeans call Mānanāra, but which the natives simply know as the *Iadoany* of Ambohijānahary, is near the mouth of the River Mananara, on the south bank. This latter is a town of some seventy or eighty houses. The Mananara, it may be mentioned, has its sources in Māndritsāra, and is one of the largest rivers on the north-east coast. Not far from the north bank of the river there is another town named Antribé, which has lately risen into some importance as a place from which timber is exported. It contains at present some sixty or eighty houses. Another village which has grown up within the last year or two is Tānjona, a place of some fifty or sixty houses, and where the timber business is apparently brisk, the cutting, sawing, and exportation of wood giving employment to a good many hands, the labourers being, as in other places, chiefly Taimōro and Mauritians. Rāntabé is the next village of any importance, having some thirty or forty houses. The pulpit in the church here I noticed consisted of an empty brandy case turned upside down and supported on four sticks! I was pleased to find that an elderly European trader, with whom I had lunch, took evident interest in the work of the church and school.

From Rantabe to Isoanierāna, the capital of Maroantsetra, is a long day's journey, chiefly along the shore, but occasionally through shrubbery. Three rivers require to be crossed by canoe, the Antrātro, Volóina and Mānambā, all of which, though seemingly large, have, like most of the rivers on the east coast, a narrow outlet. Isoanierana lies inland some two or three miles from the sea on a flat and, to some extent, swampy plain surrounded by thickly wooded mountains eight or ten miles distant. Here is stationed the Governor of the province of Maroantsetra. Probably three-fourths of the people in the town are Hova, the rest being Betsimisaraka. The comparative absence of rowdiness, indecent language, and drunkenness in the streets formed a pleasing contrast to what one sees and hears in most of the purely Betsimisaraka villages, where drunkenness and immorality prevail to a fearful extent. It may be noted here that the town marked Maroantsetra on the maps no longer exists.

Leaving here the road passes for a couple of miles or so over a level area covered with beautiful green sward and clumps of trees and bushes to the sea-shore, and after crossing the River Vinānitelo by canoes, we reach Ambátomāsina, the chief port of the province of Maroantsetra, where several European and Creole traders are settled. The town consists of probably 150 houses, the inhabitants being mostly Betsimisaraka. After a service in the church and luncheon, kindly provided by the chief Hova official, we proceeded over well-wooded level country to Andranofotsy, crossing on the way the rivers Antainambālana\* and Fitarlhana in canoes. Andranofotsy is the largest town in the province of Maroantsetra, and contains probably no less than 300 houses, the inhabitants being mostly Betsimisaraka. The road from here to Navāna runs first for about an hour through rice-fields and marsh, the mire being often more than knee deep. Soon after this it passes over a thickly wooded mountain, in some places very steep and difficult to

\* Already described by Mr. Ransome. See "The River Antanambalana," *ANNUAL No. XIV.*, p. 226. The spelling in the text is, I believe, correct.

climb, but as Rabèsandràtana, the Governor, was to pass on the following day by the same route on a visit to the north-eastern part of the province, the path had been to some extent cleared and improved. At the eastern foot of this mountain, and at the extreme end of Antongil Bay, lies Navana, a place consisting of three hamlets of from ten to a dozen houses each. It is a place of no importance, but the scenery round about is extremely charming. To the south lies the broad expanse of Antongil Bay, with the small island of Mángabè, a high hill literally covered with trees rising above the water near the head of the bay. In the immediate background there is an area of many square miles in extent, consisting of level country, or rather of a series of low parallel sand-dunes, covered with short green turf and clumps of trees, but in places marshy. This is enclosed on all sides by high mountains, mostly covered with dense forest, but here and there green patches occur on the hill-sides, where the natives cultivate their rice. While having luncheon here in one of the huts, I offered a somewhat garrulous old lady a piece of fried fowl. She refused it, however, but not from any feeling of suspicion or unfriendliness, but because fowl was "*tsy alèfan' ny trónba*" (not allowed by her dead ancestors). "Then," said I, "do you really believe your ancestors are still living?" "Of course they are," she said; "do you mean to say that my father and mother who have departed this life are not living spirits?" "Oh no," said I, "I believe they are; but how do you know that they do not wish you to eat fowl?" "Why," said she, "because it doesn't agree with me!"

An hour and a half's journey brings us to Mahalèvona, which consists of eight or ten neighbouring hamlets of a dozen to two dozen houses each. It lies at the foot of a high well-wooded range of hills which, further south, form the promontory on the eastern side of Antongil Bay.

From Mahalèvona we proceeded to Fizôny, along the level plain before mentioned. In a short time, however, this plain gradually contracts into a long valley, along which flows the River Mahalèvona, somewhat broad, but everywhere fordable, the valley being hemmed in on both sides by high thickly-wooded mountains, high up on whose flanks several ancient river-terraces are yet traceable. The path follows first one, then the other, bank of the river, and after a journey of two and a half hours, we arrive at Fizôny, passing, however, a village (Ambòdipàka) of about thirty houses on the way, while at Fizôny there are only about a score. From Fizôny to Manàkambahiny requires about eight hours. The road can hardly be said to be specially difficult, and there are only one or two ascents of any importance. The path still proceeds up the valley through which the River Mahalèvona flows, and which is crossed and recrossed about thirty times. The vegetation is very dense and rich, the forest on each side of the valley finally running down to the river, the banks of which are clothed with selaginella, ferns, mosses, cardamom, etc., and a few beautiful flowering plants. Among the conspicuous plants here is a climber (*Tetracera madagascariensis*, Willd.) with bunches of large whitish tubular flowers hanging from stalks sometimes a yard in length. This, together with a species of vine (*Vitis* sp.) yet unnamed, with large ribbed leaves, varying from two or three to fourteen or fifteen inches in breadth, sometimes almost completely covers the other foliage of the forest. This vine is also common along the

greater part of the east and north-west coasts and many miles inland. I found here also the small tree (*Bixa Orellana*, L.) which yields the well-known Arnotto dye, which might possibly form an article of commerce. This tree is said to be originally a native of America, but it is met with in various parts of Madagascar, and it always seems to be quite indigenous, being found far from human habitations. Soon we entered the forest, which occupied five or six hours in passing through. A large proportion of the plants were quite new to me, among which were several orchids and two or three balsams. Many of the trees are very large, especially that called *Ràmy*, one of which we reckoned to be about sixteen feet in circumference. The silence of the forest was remarkable; we heard not a single lemur and saw but few birds. Forest leeches were, however, plentiful, and were very annoying.

It so happened that we preceded by a day or two the Governor of Maroantsetra, who was to meet the Governor of Anônibé at a spot where Radâma I. set up a stone to mark the limit between the two provinces. The two Governors were about to hold a consultation in regard to a dispute that had arisen between two forest concessionaires, and therefore what would in most places have been a mere path, choked by cardamom and other plants, had been cleared, and a road of from eight to a dozen feet broad made. This rendered travelling easier than it would otherwise have been, though the sharply cut stems of the plants were, on the other hand, somewhat dangerous to the bearers' feet. I could not help speculating a little as to the probable cost to the people of the meeting of the two Governors. A good part of the road between Isoanierana and Andranôvêlona (in Anonibe), a distance probably of sixty miles, had been cleared as described, and the Governors and their retinues were supplied with far more food than they could possibly consume. It is not surprising that the oppressed Betsimisaraka prefer living, as they do, in small communities in the depths of the forest to being perpetually forced to do *fanompoana* and submit to other exactions. After surmounting a hill, we came to another river, the Sâhafihitra, which joins the Mânânarabé and flows into the sea a few miles north of Antalâha. The road keeps along the banks of this river as far as Mârovôngo, but continually crosses it from one side to the other; indeed between Fizôny and Manakambahiny, where we slept, we forded the Mahalevona and the Sahafihitra about forty times in the course of the day, the journey between the two places occupying about eight hours. Manakambahiny is a village of about fifteen houses. Here we found that the Governor of Anonibe and his staff had already arrived, and we had some difficulty in securing houses, indeed some of the men had to sleep out of doors under temporary sheds. Manakambahiny, it may be mentioned, a name of frequent occurrence in the island, means "the place where travellers are prevented from going further" (*manâkana*=*misâkana*), because if they do, they cannot reach the next village, and so will have to sleep in the open. After leaving the forest, which ends a few miles south of Manakambahiny, the road, for the first part of the journey, still follows the banks of the Sahafihitra, and proceeds along a winding broad valley with forest-clad mountains on either side, and, with the exception of passing through an occasional wood, keeps along the open country as far as the sea. From Mahalevona over the mountains forming the base of the



broad promontory to the east of Antongil Bay to the sea we never rose higher than 1000 feet, though some of the mountains on either side of the road probably reach to about 2500.

As we neared the sea, we met for the first time with a very beautiful plant, an Asclepiad (*Asclepias curassavica*, L.), very similar to the common *Fanôry*, except that the flowers were bright red and yellow. This plant is known in the West Indies as Wild Ipecacuanha. It seems confined apparently to the province of Anonibe. The Moonflower (*Ipomœa Bonanox*, L.) is also common here and extends some distance north, but it is not a true native of the island.

Instead of proceeding to Antalaha, we turned south and travelled along the coast to Andranovelona and Ngontsy. Andranovelona, where the Governor of Anonibe resides, is situated on comparatively flat ground about a couple of miles from the sea-shore. It is surrounded by swamps, and is said to be unhealthy. The town contains about 150 or 200 houses, but very many of them at the time of our visit were empty, as indeed was the case with many other towns and villages in the province, the people having fled on account of the grinding *fanompoana* and various monetary exactions. The province receives its name from the small village of Anonibe, about two hours' journey to the south of Andranovelona. Ngontsy is at present the seat of the timber trade carried on by one of the forest companies, and here are gathered together a number of Taimôro and others who are employed as wood-cutters, and on the Sunday, the village, it is said, is turned into a regular pandemonium. This is probably due, however, not so much to the Taimoro, who, as a rule, are a respectable and well-behaved class of people, but to other wandering nondescripts.

From Ngontsy we turned north and proceeded, chiefly along the sea-shore, to Antalaha, crossing only one river by canoe, the Onibé. On the way, as indeed at other places on the coast, we saw a number of Betsimisarakas graveyards. The coffins, which are exactly the shape of large dog-kennels, are placed under the trees by the sea-side. In one of these graveyards we counted thirty-six such coffins. At another place on the shore we witnessed a sight which I have never seen before. A group of twenty or thirty men and women were seated on mats with a grey-haired old man in the centre. We went up to see what they were doing; they were *man(g)atô tsikafàra*, or in the Hova dialect, *manao vaddy* (making a vow). Some one was dangerously ill, and the people, led by the old man, were offering prayer to God and their ancestors (and also getting drunk in the process) that the sick one might recover, promising an offering of an ox and rum should their prayer be answered. Erected before them was a frail wooden stage about four feet high, composed of four sticks fixed in the ground in the form of a square, and about a foot apart. On the top was a small framework made of bamboo laths. On this were placed a plate of rice and beef and three small cups, one containing beer (*bètsabetsa*\*), one rum, and one honey. On the ground around the stage were the head of an ox recently slaughtered, with blood sprinkled about, another plate of rice and beef, a few spoons made of the leaves of the Traveller's-tree, a piece of cloth,

\* Betsabetsa is merely the fermented juice of the sugar-cane, not as in Dictionary.

and a small fire in a broken potsherd. <sup>★</sup>The Betsimisarakas have the firmest belief in the living presence of the spirits of their ancestors, and different things are tabooed, pigs and lard especially, with many of them, as offensive to their departed friends, so that one often has to be careful not to bring lard into their dwellings. In one house where my cook used lard in frying a fowl, the landlady was in a state of trepidation, and sent the cook to say that if I didn't give her a little money, her child would be ill! But in another house there was quite a scene. The good lady discovered that lard was being used in cooking. She at once became ill, in fact shaken into paroxysms by unseen spirits! She was in the adjoining apartment to mine. She had been in this condition an hour or two before I became aware of it. I thought for a time that some one was calling geese; at last the strange and continued hysterical chuckling led me to go and see what the matter was. I found the woman on her knees on the floor, with open hands turned upwards, her eyes rolling, and her whole body in a tremor, while she gave vent to the strangest gibberings and jabberings I had ever heard. If ever woman was possessed, she was. The poor husband sat near her in the most helpless misery. He had tried to cure her by burning some incense (gumcopal?) before her, but having failed, he asked me if I had any remedy. I said I would try to concoct something. I could think of nothing better than throwing, unnoticed by her, half a cup of cold water in her face. So I brought the water, holding it behind my back. "Now, Ramatôa," said I, "I am going to cure you, don't be afraid, you'll soon be well." I dashed the water in her face, and when she recovered from the shock, I said: "Now, you are better, are you not?" She replied: "*Maiva, maiva* (better, better)." "All right," I said, "now I think I can give you something that will quite complete the cure, but wait a little while, let the water act first." In about five minutes I gave her a small piece of money, more as a corrective to the first rather rude remedy than anything else, the man saying, to soothe his poor wife: "*Nomen' ny Andriamanjaka vòla; iny havan' ny Manjaka* (The Queen has given you some money; he is a friend of the Queen)." I then asked her how she felt, when she replied; "*Afaka, hotahin' Andriamànitra anao* (I'm cured, God bless you)."

The high mountains and the thick forests mostly retire into the background north of Ngontsy, and the country for some distance north is covered with lava (dolerite), which must originally have been many hundreds of feet in thickness, but since its outflow has been largely denuded, so that now there are numerous alluvial plains nearly level with the sea and rounded hills of lava, some of them about a thousand feet high. The lava on the coast at Ambàtofaingainy, about half-way between Antalaha and Andranovelona, is amygdaloidal, the vesicles being filled with Iceland spar, zeolites, chlorite, and other minerals, while the larger cavities are occupied wholly or in part by green chalcidony.

From Antalaha northwards, the country becomes delightful, and travelling easy. We pass first through a forest, the trees in many parts being completely covered with creepers, until we arrive at the River Mânà-rabè, which is crossed by canoe. The road then runs through lovely park-like scenery, with low undulating hills, covered with short, soft,

green sward, and well besprinkled with woods, clumps of trees and bushes, and solitary shrubs. I was surprised to find in the wood here some of the weaver-finches' nests, in shape like a chemical retort, so common in the forest east of Imerina. The tree-snake known as *Mantsiviry* may frequently be seen on the branches of the solitary shrubs, and is much of the same colour as the bark. It is perfectly harmless. One of my men, not aware of its innocent character, took one by the tail, pulled it from the bush, swung it round and round in the air at full length to prevent its coiling, and finally seized it just behind the head with his other hand. It measured four feet three inches in length. This is probably the only place in the island where it is found. In another place we saw lying on the ground a beautifully spotted large-bodied serpent of a different species (a *Mandrotra*, though not that known in Imerina by the same name), probably six feet in length. It is said to come out only at night. The one we saw had been recently killed. This also is said to be harmless, in fact, from what I gathered from the natives, there are no snakes that are dangerous, the fear which the people have of them being nothing more than that dread of reptiles and such like creatures which is common to mankind, for a chameleon or an eel is as horrifying to many of the people as are these serpents, the very sight of one being sufficient to put many of them into the utmost fright. All the Malagasy serpents and snakes, even the *Ménardna* and the huge *Dôna* and *Akôma*, seem to be perfectly harmless, for I have never once seen or read or heard of any person being either poisoned or strangled by any of them.

At Andêmpona, while we were crossing the mouth of the river in a canoe, we were put into some danger of our lives. The ferryman, being too old and weak for his post, gradually allowed the canoe to be drawn into the stream, which proved too powerful for either pole or paddle, and although we were only some ten yards or so from the northern shore, the danger of being carried out on to the surf became so serious that one of the men suddenly jumped into the water, holding on to the canoe with the right hand, and swimming with the left, who, as soon as he felt the bottom, was able to pull us safely to shore. I had serious intentions of doing the same thing, but suffering from an attack of fever at the time, I determined to leave that as the last chance. We of course took good care that the bearers of the luggage were rowed across higher up the stream.

Eight hours' travel north of Andempona, in the course of which we crossed the River Lolôha, the northern boundary of Anonibe, brings us to Sâhambavany (often erroneously written and pronounced Sambava), and on the following morning we proceeded to Isoavinandriana, where the Governor of the small province of Sahambavany is stationed. Isoavinandriana is beautifully situated, and is about three miles from the sea. It consists of about 150 houses, the inhabitants being mostly Hova, with a few *Karàna* traders, and is in situation and aspect strikingly similar to Môramânga. In the province of Sahambavany we met with a very fine species of convolvulus, which was very common; it had magnificent large scarlet flowers, and is certainly one of the very finest plants in the island. It is the *Ipomœa Lindleyi*, Choisy. It occurs also in Tropical Africa and the Comoros, and has been introduced into Mauritius on account of its great beauty. It is apparently truly indigenous to Madagascar.

The road next leads to Bèmanévika over low hills of doleritic lava, covered with tall grass, and now and then through copses. Bèmanévika is a small village of twenty to thirty houses near the north bank of the River Bèmarivo, which is, as its name implies, very broad and very shallow, so shallow indeed for the most part that the canoe has to be pulled across. This river is the southern boundary of the province of Ihàrana. From here northwards the country becomes less and less beautiful, consisting of low hills covered with long brown grass, with only a solitary wood here and there. In the background to the west, however, it is very mountainous. The large eastern forest ends about  $13^{\circ} 45'$  lat., although further north there are numerous scattered woods.

X The River Māhanàra, with a village of the same name of about twelve houses on the south bank, is about three hours' journey north of Bèmanévika. It appears to be practically the northern limit of the territory occupied by the Betsimisaraka. This then may be a convenient place for saying a few words in regard to the occupation of the Betsimisaraka people. Much of the time of the men is of course taken up by unpaid state labour (*fanompoana*), which is sometimes of so grinding and oppressive a nature that, in order to escape it, they leave their old homesteads and, with their families, remove to distant and almost inaccessible parts of the forest away inland. Next to *fanompoana*, their chief occupation consists in the cultivation of rice, of which it is unnecessary to say anything here. Many of them also spend a large portion of their time in fishing, occasionally with rods or large nets, but more generally by means of what are called *vila*. These *vila* are spaces of ground on the shallow sea-shore (or in lagoons) between high and low water mark. They are often several acres in extent, and are fenced in on three sides by long sticks placed close together. They are so arranged that, when the water is at high tide, the fish can enter the enclosed space by passing between the end of either of the two side fences and the shore, at right angles to which, though commencing a little distance from it, these two fences run. When the tide goes down, there is no escape for the fish thus enclosed, and they are entrapped in a kind of basket made of rushes fixed into the two corners and at other parts of the fencing. In this way large quantities of fish are obtained.

On the coral reefs there is a kind of octopus called *Horita*, which, notwithstanding its repulsive appearance, is reckoned a delicacy by the Betsimisaraka, as indeed it is also by many Europeans who live on the shores of the Mediterranean Sea and the Atlantic Ocean. The Betsimisaraka catch it when the water is low with a two-pronged iron instrument, each of the prongs having a hitch like a fish-hook. This seems to be one of their favourite occupations. The octopus is first dried in the sun before being eaten.

• Many of the people gain a livelihood by collecting beeswax and india-rubber, which they sell on the coast to the traders. The india-rubber is obtained from two or three species of climbing plants found in the forests, and also from an erect shrub growing in the more open country known as *Bàrabànja* (a species of *Mascarenhaisia*), the wood of the latter being also occasionally used by the people in making chairs.

X One of the chief occupations of the women is the plaiting of a kind of sack, made from a rush called *Pènja* (*Lepironia mucronata*, Rich.) found

abundantly in marshy places on the east coast. These sacks are sold to the traders, who export them to Mauritius, where they are used as sugar-bags. A good portion of their time is also given to the plaiting of mats.

The weaving of *lamba* also forms one of their chief employments. The looms, as previously noticed, are often much superior to those of the Hova, and occasionally somewhat approach to the common hand-loom of Europe. The shuttle, or rather what acts as a substitute for it, is, however, pushed through the warp by the hand, and the warp, instead of being on a roller, is generally stretched out to its full length. The loom is generally placed in the shade of a large tree, or under the raised rice-houses, as weaving is nearly always done in the open air. The fibre of which the material is woven is taken from the young and still unfolded leaves of the *Rofia* palm. This is really the inner, pale-coloured pellicle of the leaflets, which is easily and quickly separated from the green epidermis. The stiffness of the fibre is removed by rubbing or pounding; it is then split into convenient widths, the strands (about four feet each in length) are tied together, twisted one after another, and coiled in a basket. It is then arranged on the loom, and the weaving commenced. The whole process is painfully tedious and slow; an ordinary common *lamba* of twelve yards in length takes about three months to make, and fetches about six shillings.

Ambóan'ho, about a mile from the sea and half a day's journey to the south of Vóhimarina (not Vohimaro, as often spelled), stands on a low bare hill top, and consists of about a hundred and fifty to two hundred houses. It is the residence of the Governor of Iharana and his staff, but is otherwise of little importance. Very large crystals of quartz, some of the largest in the world, occasionally a yard or more in length, and whose existence has been known to Europeans for the last 200 years, occur some distance to the west of the town, and the people also say that coal is found somewhere in the same neighbourhood, but this is not improbably mere lignite. I have some reason for suspecting that the large quartz crystals are found in crevices in volcanic rocks, though of course I cannot be sure, as I have not seen them *in situ*. The country hereabout mostly consists of a purplish spherulitic felsite and dolerite.

Vohimarina contains about two hundred houses, running in a line along the curving beach. The population is mixed, but chiefly consists of Hova and Sakalava, the latter indeed being the natives of the country. The River Mahanara seems to form the northern limit of the Betsimisaraka, to the north of which are Sakalava. The coral reef, running at some distance from the shore, encloses the bay, which forms a safe harbour for vessels. It is this coral reef, I believe, that gives the name of Iharana to the district. Behind the town of Vohimarina lies a fetid mangrove swamp, and behind that again a large level plain, on which, at the time we passed over it, several thousand cattle, brought chiefly from the west coast for exportation, were being tended. About the village of Vohimarina there is an abundance of the shrub known as *Mòkanazy* or *Lamòty* (*Zizyphus Jujuba*, Lam.), which yields a yellow edible fruit about the size of a cherry. From here it is found as far as the northern end of the island, and all along the western coast also. In the extreme north of the island it is known as *Lamòtifòtsy*, while the *Vòatrònoka* (to be referred to further on) is named *Lamòtimainty*.

The country to the north of Vohimarina consists of low sandy hills near the sea, and high mountains and mountain ranges some six or eight miles to the west. All these are covered with coarse grasses, chiefly *Vèrò* and *Ténina*, and as some of them had recently been fired, they presented by no means an attractive appearance. A wood may be seen here and there, and the river-sides are clothed with vegetation. The small fan-palm, *Sàtramira* (*Hyphæne coriacea*, Gærtn.) begins to put in an appearance from about Amboaniho, at first dwarfed, but increasing in size and abundance as we proceed northwards. Here and there also a Tamarind tree is to be seen, but the *Rofia* palm no longer flourishes in the valleys, as it does further south.

Between Vohimarina and Antomboka there are two roads, one near the coast, the other somewhat inland. After hearing the merits and demerits of both, we determined to follow the former. Five hours' travel brought us to a collection of half-a-dozen huts known as Ambòdimadiro, two hours of which, however, were spent in firing the gun and shouting on the southern bank of the River Maintihàlaka in order to get the people of the village at some distance on the other side to bring a canoe. We slept at Mânambàto, a village of six or eight houses on the southern side of the river of the same name.

Leaving Manambato the road runs between high mountains some four or five miles from the shore, and a somewhat long day's journey brings us to Andravina, a place consisting of several small hamlets about a mile from the sea. The next day's journey brings us to the mouth of the River Lokía (Port Louquez). Soon after we left Andravina, we startled a herd of eight wild hogs. On our yelling at them, they scampered over the hills, and were soon out of sight. These are the first I have ever seen in the island, although they are extremely abundant, and although, within the last twenty years, I have travelled thousands of miles in various directions. They must be extremely clever at concealing themselves.

The country from Andravina to the River Lokia is by no means attractive. On one part of the road the fan-palm known as *Sàtrambi* is very abundant, the *Satramira* also occurring. On the coast there is a belt of flat land a mile or two in width, then a series of low hills generally covered with loose sand, and, five or six miles from the sea, large bare mountains and mountain ranges. The lower levels are chiefly covered with mangroves, two kinds of fan-palm, the *Vòavòntaka*, and the Madagascar plum known as *Vòatrónaka*. The last two are noticeable among east coast plants for reaching so far north. They are also found in the north-western part of the island. The Tamarind too begins to be somewhat frequent, and several new plants, peculiar to the north and north-west end of the island, put in an appearance. The rock is chiefly a grey granite, the lower hills and levels being covered with a somewhat hick deposit of loose sand.

The River Lokia divides the province of Iharana from that of Antomboka. To get from one province to the other, the estuary of the river, or rather an arm of the sea, about a mile and a half wide, is crossed. This is rather dangerous, as it has to be done in a small canoe about two feet wide with an outrigger, and that only in the night time, when the wind is somewhat abated. We crossed at 3 o'clock in the morning, and in consequence of the smallness of the canoe, we got a considerable wetting.

About six hours' journey to the north of the Lokia, more or less near the coast, brings us to the River Rodo. On the southern bank of the river there is a wood in which numerous Baobabs occur. Indeed these Baobabs are pretty common in the whole northern part of Madagascar. The Rodo has its sources in the extreme end of the central mountain range of the island. The river is small, but requires a canoe to cross it, the canoe at the ferry when we crossed being no larger than a cattle trough, and kept from upsetting by an outrigger. In fact it was too small to sit in, and we were accommodated on seats laid across the top. The village, known also as Rodo, consists of six or eight houses and is about a couple of miles north of the river. Leaving Rodo we pass over a low sandstone range running westwards a few miles, cross the stream known as Marlaràno, on the sides of which are some fine exposures of almost horizontal reddish sandstone, then over a nearly level plain of basalt to the foot of Ambôhimàrina, the capital of Antomboka province and the residence of the Hova Governor.

The population from Vohimarina to Ambohimarina is extremely sparse. The natives of the soil are Sakalava, who live in small and widely scattered hamlets. The rest of the population consists of a few Betsimisaraka and Mozambiques; of slaves belonging to the more wealthy Hova or Sakalava, and whose occupation is the tending of their masters' cattle, of which there are numerous large herds; and at stated intervals of one or two decrepit old Hova soldiers, whose business it is to forward government letters from stage to stage and to attend to other minor matters. The condition of these Hova soldiers is very pitiable; they are practically banished for life. They have to pick up a living as best they may. The slaves seem to be better off, as they can manage to let a cow *die* now and again; they also get plenty of milk, of which they make a kind of curds, called *tôla*. The province of Antomboka (or, as the natives call it, Antomboko) is named after a stream which rises in the north end of Ambôhitra mountain, and flows into the Bay of Diego Suarez. Ambohimarina is situated on the top of a hill, whose summit is about 1400 feet high. The hill, however, is not isolated, as it forms part of a mountain mass, more or less broken, immediately to the south-east of Diego Suarez Bay. This mountain mass consists of sandstone, with a very slight dip to the north. Not far from the summit a perpendicular, though not very high, cliff may be seen running horizontally for a great distance. This cliff has to be surmounted by a ladder in ascending to the town. There are other ascents, however, where no ladder is necessary. Above the sandstone there is a considerable space of comparatively level ground, the town being built on the western side of a slope above this level space. It consists of 150 to 200 houses, arranged without any order whatsoever. It is an exceedingly awkward place to walk about in, and at night quite dangerous, for almost at every step there is an ugly, angular, outcropping lump of the underlying rock. This rock is in places piled up in wall-like layers six or eight feet high, and reminds one of the ruins of an old castle. The church, which has been built with some care, is by far the best building in the town. The south-east trade wind blows for the greater part of the year, and indeed we found this wind, so constant, cold, and piercing, and, near the sea, so laden with sand and dust, by far the most trying feature in Antomboka province.

The journey from Ambohimarina to Diego (the native name is Antse-ranana) takes about five hours, the country being comparatively level, the latter half of it being down a very small incline. It is covered mostly with the tall brown *Vèro* grass, and dotted chiefly with *Sakdana*, *Ràmì-rànja* (*Cordia subcordata*, Lam.) and Tamarind trees. As soon as one enters Diego, the buildings, the stores, the streets all laid out in order, the line of rails, etc., show it to be a European town. I paid my respects to the French Governor, who received me graciously, and kindly offered me a guide to Anòrontsànga; his services, however, I did not need.

I made my way to the best hotel in the place, but found it to be a by no means inviting institution. It was a large barn-like building, with a few large box-like structures in the yard for bed-rooms. As these were all occupied, I had to be satisfied with a shake-down on the floor of the large building, the only covering for which was a dirty white table-cloth. The materials provided for the morning ablutions were a stone decanter of water and a table napkin. The food, however, was good. I found that their charges were three francs for each meal, but as I had made no agreement with them beforehand, I had to pay five. This, in the meantime, is the best hotel in the place.

We now directed our steps for the first time southwards, and after paying a second visit to Ambohimarina and examining the school, we turned westwards, as it was my intention to climb the mountain of Ambohitra if possible. The Governor at Ambohimarina sent a message to the head man at Ambibaka, a small village at the north-east foot of the mountain, that he was to supply us with a guide to conduct us to the summit. We started therefore with the guide from Ambibaka early on the following morning, as it was said to be an extremely long day's journey to the top and back again, and that, in all probability, we should have to sleep somewhere under the open sky, as there were no houses, and we had no tent. The upper half of the mountain, which extends in a northerly and southerly direction for about fifteen or twenty miles, is covered from end to end with forest, and is supposed by the people in the neighbourhood to be haunted by various uncanny creatures; and as superstition is infectious, some of my men set out with a certain amount of trepidation. When we had gone about a couple of hours and had reached the edge of the forest, our guide, whether from fear or actual ignorance I know not, suddenly declared that he did not know the road, and as neither coaxing nor intimidation had the slightest effect on him, he returned home. There were four Taimoro carpenters near by, making the framework of a house for the French, and as I saw that my men were more than ever disinclined to venture any further, I thought it best to encamp at the outskirts of the forest and await the morrow. We therefore made a few booths at the spot where the carpenters were at work, and, before dark, collected sufficient wood for two or three large fires. The night was bitterly cold, and, in spite of all our precautions, we could not keep warm. Early on the following morning I said to the men: "Now I am going to try to find the top of this mountain, and in order that I may not lose my way in the forest, the carpenters have lent me this axe to mark the trees as I go along; if I do not find my way to the top, I shall at any rate be able to find my way back again. Now I want to separate the brave from the cowards; those that will go



with me, come here." Presently a voice cried: "I'll go," then another and another, until finally quite half the men offered to accompany me. "Now," said I, "we may probably have to sleep all night in the forest." "All right," said they, "if you are willing to rough it, we are." And so, putting a few provisions together, we started, I of course on foot, for a palanquin was out of the question. Soon after starting we found a path, or rather a track, made by wild oxen, which are abundant in the forest. We followed it for probably three miles, then it branched, and we were puzzled which path to take; we took the one to the right, but after following this for about half an hour, it turned westwards, and as we got more and more entangled in a mass of creepers and brambles, we decided to retrace our steps and follow the other path. This eventually led us to a pond fifty or sixty yards across, and probably an old crater. Here we decided to halt for refreshment, and then try again. The top of a steep hill immediately above us we took to be the summit of the mountain. We ascended this with difficulty after half an hour's exertion, and rejoiced at being on the highest point of the mountain; however, we were not certain of this, as we could not see for trees. We followed the ridge a mile or so, and to our dismay got an occasional peep first of one peak, then of another, considerably higher than the one we were on. But they were a long way off, and which was the highest we could not tell. We proceeded a little way in the direction of one of them, however, until at last, behold, notches on the trees which we ourselves had recently made with the axe! We had actually got by a different route to the point we had reached on the first path. We had described a circle, and as our efforts seemed hopeless in spite of axe, compass, and perseverance, we started for home, or rather the booths on the outskirts of the forest.

Looked at from a distance from the mountain, you would think it comparatively easy to reach the summit, but it is quite a different matter when you are once within the forest. Probably even without a guide one might find the highest peak in two or three days by getting a glimpse here and there of one's position, or by a lucky stroke even in one day, but we had not time for such an attempt. The best path to the top of the mountain, we learned afterwards, is from the north-west, but few of the natives will venture so far. There is said to be a lake near the summit larger than the one we saw, which not improbably is also a volcanic crater. The mountain itself, especially when viewed from Ambohimarina, bears a very striking resemblance to Ankàratra as seen from Antananarivo, but differs from the latter in having its upper half clad with forest. This forest, for the most part, has not so dense an undergrowth as the great forest that clothes the eastern slopes of the island, and its trees, shrubs, and herbs are nearly all different, though we recognized the *Famélona*, *Nònoka*, *Haròngana*, *Tsimpériféry* and some dozen others found further south. I also found the little *Stellaria aquatica*, Scop. This is the first time it has been found in Madagascar, and it is possibly confined to the Ambohitra mountain. Birds are scarce, but wild cattle, wild hogs, *Fósa*, and *Vontsira* are common. The mountain reaches in its highest point probably 5000 feet, the elevation we reached being 4150. It is an extinct volcano, and is apparently entirely composed of basalt. This has flowed from the mountain and covered an area of about 1200 square miles. Around its base are many small volcanoes, possibly forty or fifty in all.

From the north-eastern slopes of Ambohitra we turned southwards and proceeded by a very roundabout way to Sajòavàto, a village of some twenty houses. It is a long day's journey, and the frequently rough surface of the lava bed, covered with tall wiry grass, makes it trying to the bare feet of the bearers. Vegetation is by no means profuse, though there are woods here and there, and numerous trees and shrubs along the water-courses. Then we proceeded south as far as Anivoràno, which consists of several neighbouring villages, the country still being more or less bleak and covered with black lava. From here there is a choice of three roads as far as Isèsy: one near the sea, one skirting the central mountain mass, and one intermediate. We chose the one skirting the mountains. On the way, about a mile and a half south-east of Anivoràno, there is an oval sheet of water perhaps a mile and a half in diameter, and surrounded by somewhat higher ground. It is probably a crater-lake, though I could find no irrefragable evidence of this.

After three or four hours' travelling, we reached the western edge of the central mountain range, at first composed of nummulitic limestone, but followed the to south by thick beds of brownish sandstone. We then passed down a long valley just within the western edge of the range, sleeping at a small village of three or four houses. Next morning we still followed the valley, but soon passed over a spur of the mountains, and proceeded down another valley thick with trees and bushes. We had our midday meal among the rocks in the bed of a small stream, and failing to reach Isesy, had to sleep in the open. In the night we were visited by a couple of wild boars, which, however, finding there were human beings near, quickly decamped.

Before passing on any further, while we are in the midst of the Antankàrana country, a few words with regard to the people may not be out of place. The Tankarana derive their name from the face of a steep rock or rocks (*hàrana*) in a spur which runs out from the central mountains in a south-westerly direction about half way between Anivoràno and Ifàsy. There is also a river of the same name not far from this *harana*. This spur consists of limestone, and somewhere about the middle of it there is a large cave.\* It should be noted that the Antankarana province is quite confined to the western sea-board, and does not, as given on some of the maps, reach across the island.

The people are remarkably cleanly in their persons, dress, and houses. The men frequently wear a long white cotton frock like that of the Arabs, with a white or red fez, or their *lamba* folded as a turban round their heads. The houses of the Tankarana are small, and mostly consist of a framework filled in with thin laths taken from the midrib of the leaf of the *Rofa* palm and laid edge to edge, the roof being thatched with leaves of the Traveller's-tree. A raised bedstead is in one corner, which may be any of the four, and the fire-place in another, though sometimes there is a separate lean-to in which all the cooking is done. There are no fowls kept in the house, as in Hova houses; there is a separate pen for them outside. Their household utensils are few and simple. Some of the houses of the wealthy are, however, much in advance of the rest. One such house, in which I one day had lunch, may not perhaps be unworthy of description. The

\* See Mr. Batchelor's paper in ANNUAL NO. III., p. 27.

house itself was of the ordinary kind, looked at from the outside, but the moment I entered I saw it belonged to some superior person. In the north-east corner, and occupying about a sixth of the space in the house, was a raised bedstead, well finished and perfectly clean, with a broad black board, either oiled or polished, along the front, and decorated with five small, oval, gilt-edged mirrors. There was a good supply of soft mattresses and pillows, stuffed with the downy hairs from the pods of the *Pámba* (*Eriodendron anfractuosum*, DC.), and a muslin mosquito curtain, all spotlessly clean. Under the bed were numerous plates, basins, spoons, and a lamp, all neatly arranged in rows. The north, south, and east walls were tapestried with lengths of large, uncut, gaudily coloured pocket-handkerchiefs. A small table at the foot of the bed against the east wall contained a decanter, a couple of painted water bottles, coloured glass tumblers, and a few gilt-edged china cups and saucers. South of the table against the wall there was a wooden form, and another against the south wall, on which were arranged on end a dozen rolls of new unused mats fifteen or sixteen inches in width, and on the top of these about the same number of soft pillows or cushions covered with fancy red and white print. On the west wall was a well-made native wooden rack with gun, pouch, belt and spear. Against the north wall, as far as the bed, were six or eight small tin and wooden trunks, and hanging above them were three mirrors, between which were a couple of Japanese framed pictures. In the south-west corner there was a demijohn of rum. The floor was covered with fancy-patterned unicoloured mats. Everything in the house was beautifully clean and neatly arranged, and the pictures and mirrors on the wall were actually hung *straight*. Why is it that the Hova, in many ways the most advanced tribe in the island, have the dirtiest houses? None of the Betsimisaraka or Tankarana houses contain pigs, sheep, or fowls, and the ceilings are not besmirched with smoke and cobwebs, as is the case in most Hova houses. In personal cleanliness and morals too the palm certainly does not belong to the Hova. The lady of the house I have described was scrupulously clean and neatly dressed in a pretty light print, and as ornaments she wore fifteen or sixteen solid silver bangles, and quite a profusion of strings of beads and red coral ornamented with silver. Her hair was free from lard, that article being tabooed, and no disfigurements in the shape of tattoo or paint detracted from her appearance. She wore around her neck a charm (*aoly*) consisting of two fruits about the size of a nutmeg fastened to a string. This, she said, was to defend her from small-pox, which, it seems, had been recently prevalent. Her young child was sick, and she was working the *sikidy* (divination board) to ascertain what medicine to give it. This lady gave me some *pitiky* for refreshment. They were simply bananas that had been dried in the sun for about a week, and were sweet and pleasant to the taste, reminding one very much of dates. They were not the black and compressed *fintsa* of the Hova, which look anything but inviting.

The flora of this part of the island is widely different from that on the eastern sea-board, even in the same latitude, but into the details of this I need not here enter.

Soon after leaving our encampment, the path led out from among the mountains on to the open level plain at their western foot, and in a few

hours we were at Isesy, a village, or rather a collection of adjoining hamlets, of sixty or eighty houses. After our mid-day meal we proceeded to Mâhavavy, a small place of some twenty houses on the south side of the broad but (at least at this time of the year) shallow river of the same name. It was Thursday, and Thursday is the sacred day on which the people abstain from many of their ordinary occupations. I had occasion to require a dollar's worth of change, but could not get it until the evening. In other ways too we were put to some trifling inconveniences. I have called Thursday their "sacred" day, inasmuch as they then refrain from many ordinary duties, but the people themselves would call it "*andro râtly*" (evil or unlucky day), as it seems a former Tankarana king died on a Thursday, from which event the custom arose. Many of the people, it is said, put their children to death if born on this day.

\* Speaking of money reminds me that the Tankarana use French coins. The five-franc-piece they call *Parâta*; a franc-piece is *Kirôbobôry*; a half-franc-piece is *Sômonibôry*; ten centimes is *Gorosô*; a sou is *Pitisô*. It will be seen that these are for the most part corruptions from the French.

A day's journey from Mahavavy along the plain, about half way between the mountains and the sea, brings us to Ifâsy, a place of 80 or 90 houses, where a Hova garrison has been recently established. At the time of our visit there were two Hova governors, one stationed there by the Governor of Iharana, the other by the Governor of Ambohimarina, the respective limits of the two provinces being yet apparently unsettled. Next day we proceeded to Ambâtoharânana, which consists of several adjoining hamlets. The greater part of the road still runs along the plain, mostly parallel to the western edge of the central range of mountains, but from Ambatoharanana south it winds in and out among the hills (which here form a spur running out towards the sea), runs a little distance from the western foot of Ikâlâbénôno, a mountain with six or seven rounded peaks, as the name indeed indicates, and finally leads out on to the large plain on which Ampâmpana is built. Before descending to this plain (which is many miles in width, and runs for probably twenty miles or so in a south-easterly direction), we came across a number of Tankarana on a wooded hill-top making an offering of a brown calf, as someone was ill in their village. The calf, with its legs tied, was lying on the ground, while an elderly man, holding the end of the tail, was offering an invocatory prayer to God and the spirits of their ancestors. Ampâmpana is a recently established Hova garrison town of thirty or forty houses, with several small Sakalava villages round about. The whole town had been burned down only about a week before our arrival.

The country from the south end of the mountain of Ambohitra to near Ikalabenono, briefly described, is as follows. A belt of almost flat land of varying width, say from five to ten miles or more, stretches from the central mountain range to the sea. The western edge of this range, which runs in a nearly south-westerly direction, is mostly covered with thick forest, which, however, is being largely burned by the natives, while the sea-board is generally fringed with a thick mass of mangroves. On the plain are fan-palms and numerous other shrubs and trees, these being more numerous near the central mountains and along the water-courses. The country differs in several respects from the east coast even in the same latitude; the flora, on the whole, is remarkably

different, and the air, untempered by the south-east trades, is many degrees hotter. The country, moreover, is by no means so well watered, the rivers, at any rate during the dry season, being very shallow. Several new birds put in an appearance, and guinea-fowl, of which, on one occasion, I was lucky enough to get three at a single shot, are remarkably plentiful, while on the east coast, for a distance of 300 miles (from Fenoarivo to Diego Suarez), we never saw one, though they are occasionally to be found.

Three or four hours' journey along the plain brings us to Sámbiráno, a place of about 60 or 80 houses. It consists of two villages, one on each bank of the river of the same name, and is situated a mile or two from the sea. Sambirano is the largest river in the north-western part of the island, at any rate, as far south as Andránosamónta. It is very wide, but in the dry season of the year is in many places fordable. During heavy rains it frequently overflows its steep banks and spreads its waters far and wide over the plain. In fact this great plain, which covers an area probably of 300 or 400 square miles, owes its existence entirely to this cause. Facing the sea, as indeed is the case in most of the bays on the north-west coast, is an immense mangrove swamp probably 80 or 100 square miles in extent.

An hour's journey south of Sambirano brings us to the southern edge of this great plain, and another couple of hours' travel over well-wooded low hills at the western base of the great central mountain range brings us to Jangòà. It was on these wooded hills that one of the most important engagements took place between the French and the Malagasy during the late war, and the spot was pointed out to us by our guide. Jangoa consists of two or three villages in a valley through which the small river of the same name runs, and is situated a mile or two from the sea. The journey from there to Mèlaka, situated on the coast, occupies about an hour and a half, and another hour and a half brings us to Ambódimidiro. If the tide be in, however, which was the case when we were there, the streams are unfordable and the inland route must be taken, which is nearly twice the distance. The country about Ambodimidiro is very beautiful, though, in my opinion, not equalling that about Vongo on the east coast.

Our next destination was Anòrontsànga, and the road to this place from Ambodimidiro is nearly three times longer than it need be, for instead of cutting across the promontory in a west-south-west direction, it proceeds south-south-easterly to Ankaràmy (to which place it is a long day's journey), and then in a direction slightly north of west for a day and a half to Anorontsanga. The whole country from Ambodimidiro to the latter place is well-wooded, and the slopes of the great central range to the east are covered with thick forest. From Ankaràmy to Anorontsanga the road is very bad, in some places well-nigh impassable. A large mountain known as Bézávona, which does not appear to be marked on the maps, exists about half way between the two places.

But where are the Sakalava, the natives of this part of the island? All the way from the south end of Antankarana to Andránosamonta we did not meet with more than about half-a-dozen Sakalava villages. The towns are almost entirely occupied by Hova and Mozambiques, the latter being apparently more numerous than the former, but the Sakalava

are in no greater number than the migrant Betsimisaraka, who come for purposes of trade. "Where then are the real natives of the soil?" I asked an intelligent Hova. "As far from us Hova as they can get" was his reply (meaning that they live in distant and secluded valleys). "Why?" "Because they dislike *fanompoana*." I have perhaps travelled as much in Madagascar as any other European, and the result of my experience from all I have seen and heard is that *all* the outside tribes distinctly dislike the Hova. Why? Chiefly because they distinctly dislike *fanompoana*, and they would be extraordinary beings if they did not. Most, if not all, of the Tankarana positively refuse thus to give away their labour for nothing and for others' benefit. When will the Malagasy Government see that this *fanompoana* is the great curse of the country, keeping the people miserably poor, repressing all originality and enterprise, breeding all forms of oppression, trickery, bribery and crime, and fostering the hatred of the outside tribes?

Anorontsanga is the capital of the province of the same name, which extends from the northern end of the Sambirano plain to the River Mèvarano. There are indeed two towns, with perhaps 150 houses in each. The lower one, which is on the coast, is known as Andranto, and is mostly inhabited by Betsimisaraka and Mozambiques. Anorontsanga itself is about a mile inland and situated on an eminence, from which there is a magnificent view to the south. It is the Hova garrison town. The whole country, including the rounded promontory on which Anorontsanga is situated, is well-covered with numerous species of shrubs and trees, including among others the cashew-nut (*Mahabiba*), the *Vavandaka* and the bamboo, the last two of which are so common on the eastern side of the island. The bamboo is here called *Valiha*, and it is from this that the musical instrument known by the same name, and so common in Imerina, is made. Neither the fan-palms nor the *Adabo*, which further south form such a noticeable feature in the landscape, are here very common. Of the fan-palms three species exist in the island, which are generally known on the north-west coast as *Satramira*, *Satrambe* and *Befelatanana*. The *Satramira* seems to be the commonest of the three, in some places almost wholly monopolizing the ground and covering great stretches of country. The *Satrambe* is perhaps not much less abundant, and in certain localities predominates over the *Satramira*, or even exists exclusively of it, though more frequently the two are found together. They are sufficiently similar in general appearance to lead a careless observer to suppose they are one and the same, but they differ outwardly in the following respects: the *Satrambe* has a single, tall, straight stem, whereas the *Satramira* generally divides out from the surface of the ground into two (often four or five) branches forming a sort of rude U, and never reaches the height of the *Satrambe*. The *Satrambe* has, moreover, unarmed leaf-stalks, whereas the edges of those of the *Satramira* possess stiff sharp hooks. The fruit of the former again is elliptical and about an inch and a quarter in length, that of the latter is about the size of an apple, but much swollen at one end, and it is this which is employed by the natives in making rum. The *Befelatanana* (*Bismarckia nobilis*, Hild. and W.?) is by no means so common as the other two, and seems nowhere to occur in large numbers. While the *Satrambe* resembles, on the one hand, the *Satramira*, it still more

resembles the *Befelatanana*, and is very frequently taken for it, the fact being that it is intermediate in size between the two. The only outward differences that I know of by which it may be distinguished from the *Satrambe* are its thicker smoother stem, its more robust appearance, and its much larger fruit. The *Satrambe* is as yet, I believe, quite unknown to science.

One striking difference between the vegetation of the east and north-west coasts is this, that while on the east coast a continuous belt of wood varying in thickness, say from 50 to 100 yards or more, and stretching along almost the entire length of the island, runs close to the sea, on the north-west coast, and I believe also on the whole of the western sea-board, no such belt exists.

Leaving Anorontsanga we sailed across the bay in a couple of canoes with outriggers in a south-easterly direction to the small hamlet of Androvahonko. The first part of the journey was on the open sea, and there being a good breeze, we went scudding along at a great rate. But never more will I trust myself to a canoe when the sea is other than calm, for though there was perhaps but little danger, the water came over the side with almost every wave. As I was in my palanquin in the middle of the canoe, it is needless to say I got a thorough drenching and was practically sitting in water for about a couple of hours. After crossing the bay, we entered a very long, narrow, winding channel, on both sides of which was a dense mangrove swamp. We could no longer employ sail, and consequently our progress was painfully slow, except in the broader reaches of the water, where we got a little wind. We left Anorontsanga about 2 o'clock in the afternoon, but darkness had set in before we reached our destination. When we were within gun-shot of the village, the canoe which I was in unluckily ran on a rock in the middle of the river. One of the boatmen endeavoured to push it off with a long pole, but failed; two tried, but still it stuck. Some of the bearers were told to go aft so as to lighten the fore part of the canoe; another attempt was made to push it off the rock, but in vain. Then one of the boatmen got out of the canoe on to the rock, and pulled with all his might, but no, the canoe would not stir; two got out, three, but all to no purpose, it seemed a complete fixture, and do what we could, the little craft refused to give way. The water round the rock was eight or ten feet deep and swarming with crocodiles, the tide was fast ebbing, the night was dark, and in the meantime we were being devoured by mosquitoes. I was barefoot at the time, not having been able to wear shoes and stockings for some days previous, owing to sores arising from mosquito bites. Our position was anything but enviable. Fortunately, however, the second canoe was at the landing-place not far away, and after considerable shouting, we got the boatmen to bring it to our rescue, which they did with the aid of a lantern. We had been fully an hour on the rock, and the hinder end of the canoe was fast sinking with the tide, the outrigger meanwhile creaking ready to break. What would have been the consequence had we been out of hearing further down the river when the accident occurred, or had we not had a second canoe, it is impossible to say, as the rock was too small for us all to have stood on it throughout the night.

Leaving Androvahonko we proceeded southwards, and on the second

day reached Andranosamonta. This is a place of some importance, where Hindoo and one or two European traders are settled. Indeed it is perhaps the most important centre of trade, excluding Mojangà, in the north-west of the island. A day and a half's further travel brought us to Mevarano, the most southerly point reached by us.

Bird life seems to be much more abundant in the western than in any other part of the island. The numerous marshes and shallow ponds afford homes for great numbers of waterfowl of various kinds, especially *Tsiriry* and *Aròsy* (Wild ducks), and flocks of *Vòrompòtsy* (white Egrets). Black Parrots exist in great numbers, and they may be seen flying about or heard screeching all the day long. They are said by the natives to be excellent eating. Perhaps the birds which occur in the greatest numbers, however, are the small green Parroquets (*Sàrivàzo*), which are continually flying about from tree to tree in large flocks, all ceaselessly chirping during their rapid flight. A flock of them settling on a bare tree gives it at once the appearance of being covered with foliage. On one or two occasions what we thought were the leaves of trees suddenly disappeared, leaving the branches entirely bare. The "leaves" turned out to be Parroquets. These birds are also common enough on the east coast, though by no means so numerous as on the west. Guinea-fowl in flocks of from six to a dozen are, as I have before remarked, also abundant. The pretty, long-tailed, green *Tsikirioka* (the Madagascar Bee-eater) is also found here as well as in all other warm parts of the island. It builds its nest, like the Kingfisher, in holes in sandbanks. On the steep banks of the River Sambirano these nests are very abundant. I measured one of the holes, and found it to run in a horizontal direction to a depth of over a yard. A very pretty Hoopoe (*Tàkodàra*) may occasionally be seen. On a tree it is extremely active and graceful in its movements. It jumps upwards from branch to branch with the greatest rapidity, merely bounding from one to another. It is this bird which, sitting in a tree for hours together during the night, repeatedly gives forth five or six very weird notes. The peculiar chatter of the *Gàdragàdraka*, a bird of a beautiful fawn colour, a kind of Sand-grouse, much like a Pigeon in general appearance, may often be heard. The native name is very expressive of its strange chuckling. Many of the birds found in the central parts of the island exist also here, as, for instance, the *Goaika*, *Papàngo*, *Tolòho*, *Taitso*, *Kankàfotra*, *Vòromahèry*, *Tsintsina*, *Vintsy*, *Soròhitra*, *Fòdy*, *Kibóbo* (*Kabíbo*, *Sak.*), *Tàkatra*, *Hindry*, *Tsikiròvana* (apparently found throughout the island), *Domòhina* and *Railòvy*.\* Many of the birds found here, however, do not occur in the central part of the island, e.g. the *Véronadàbo*, *Triotrio*, *Tàraràka*, *Tòrotòroko*, *Hankaina*, and *Tàkodàra*.†

Of the animal life of this part of the island I have very little knowledge. Crocodiles, as is well known, are extremely abundant in the rivers. They do not, however, confine themselves to rivers, they exist also in small streams. Once or twice we met with them in small runnels not more than knee deep, and on one occasion in what may be described as a mere puddle. Unwary travellers therefore often lose their lives in the most unexpected manner. Wild hogs, it is needless to say, exist also in great

\* Species of Crow, Kite, Lark-heeled cuckoo, Coua, Cuckoo, Falcon, Warbler, Kingfisher, Lark, Cardinal-bird, Bustard-quail, Stork, Buzzard, Bulbul, Pigeon and Drongo.

† Species of Pigeon, Wagtail, Crow, Owl, Eagle and Hoopoe.



ambers. I was somewhat surprised to come across a veritable *Ménaràna* (serpent), as I thought they were confined to the east coast. Though they often attain a length of five or six feet, and are as thick as one's wrist, they are perfectly harmless. The serpent known as *Do* or *Dòna* is also common in this part of the island.

At Andranosamonta, having parted with all my bearers but one, I hired a boat for seven dollars to take me back to Anorontsanga. The boat was a large one, and we had to wait a couple of days before the tide was sufficiently high to allow of its floating. Even then it was only after a considerable amount of pushing and tugging that the craft began to move, but in an hour we were a couple of miles or so down the narrow tidal stream. About midday the captain stopped the boat, saying they must collect some firewood, which indeed was done, though he himself went back to Andranosamonta, and did not return until after dark, we, in the meantime, being terribly plagued with mosquitoes, for apparently wherever there are mangrove swamps these little pests abound. About 9 o'clock at night the anchor was again dropped, and in the morning we awoke to find our boat lying in the middle of a broad stretch of bare sand in the long gulf that runs down to Andranosamonta. We started again, however, when the water was sufficiently high for the boat to float, being punted along for three or four hours. Naturally getting tired of this, the captain and two of the men went on shore on the excuse of fetching fresh water, but in reality to wash their *lamba*, and again did not return until the evening. About midnight a favourable breeze sprang up, and we soon rounded the long peninsula enclosing the Gulf of Andranosamonta. As there were still three weeks before the mail left Nòsibè for Tamatave, we had some days on our hands, a couple of which we spent in visiting Kabamby and the islands of Ambariovaliha, Antànifály and Bèrofia. Kabamby is on the sea-coast and in about the same latitude as Andranosamonta. It is a Sakalava village of about twenty houses, where Ianjakà, a native princess, resides. We thought it well to pay our respects to her, so asked an elderly Sakalava, who was making a *làkam-piàra* (a kind of canoe) under a large Tamarind tree, if he thought this would be agreeable. He sent a messenger to enquire, who kept us waiting about an hour before returning. We were then taken into the presence of the Princess's Prime Minister. The Princess is not married, or rather she is very much married, living first with one man, then another, according to her fancy. Here were assembled all the chief people of the place, and after all the proper ceremonials were gone through, which took about half an hour, but which to me were largely inaudible on account of the continued hammering of a stout burly silversmith making bangles in a corner of the hut, I put the question straight: "Can I see the Princess, or not?" "O" said the man, "we must have a little time to consider it." "But," said I, "I have no time to spare; I am a stranger, and thought it right to pay my respects to the Princess; if I can see her, I shall be glad; if I cannot, I shall not be grieved." I discovered that I should not be able to see her until the morrow, as the day was Tuesday, so bade them farewell. A few miles from this village there is another, which is a Hova military outpost; at this we did not call. At the islands of Ambariovaliha, Antanifaly, and Berofia we made no stay, merely landing for about half an hour at each

place. There are a few small villages on the two larger islands (Amba-rivaliha and Berofia) occupied by Sakalava and Mozambiques. The small island of Antanifaly is not inhabited; it is spoken of as *màsina*. The name of the island indeed signifies that many things are tabooed in regard to it, for *faly* is merely the Sakalava form of *fddy* (taboo). So with Nosifaly further north; it is really Nosifady, a Sakalava king having formerly been buried there. It is considered a sort of crime to kill any living creature on the island of Antanifaly, consequently the animals and birds are almost devoid of fear. At the point where we landed a large number of *Fôdy* (Cardinal-birds) were twittering and playing round about us, and allowed us to approach them to within about a yard. We saw also some *Tsikôza* (a kind of Rail), called by the Sakalava *Droviky*, which were remarkably confiding, though these birds on the main land are extremely shy; one of them actually came into the hut which some Sakalava, who had settled here for a few days to catch sea-turtles (*dra*), had erected, and began eating rice from the pot on the fire. Rats also and other creatures are equally tame. These three islands and Kálakajôro lie immediately to the south-west of Anorontsanga.

After landing at Anorontsanga and packing my goods, I hired another boat for Nosibe, calling on the way, however, at the island of Ankâzobê-râvy, and also at Ambâvatôby, where we spent the night. At Ambavâtoby, as is well known, there are said to be two or three outcrops of coal. These outcrops occur on the eastern and western sides of the bay, and also in other localities in the neighbourhood. The outcrops at the surface, however, are of no importance, being merely carbonaceous shale. The beds occur in Jurassic sandstones with a northerly and southerly strike. Carbonaceous shales appear to be somewhat abundant in this part of the island, cropping out, for instance, on the shore about a couple of miles to the west of Anorontsanga, at Ambodimadiro, and at other places.

The rest of the journey needs no description. After waiting a fortnight for the mail at Nosibe, I took steamer round to Tamatave, and thence by palanquin proceeded to Antananarivo, being glad to get home again after five months' absence, and after travelling a distance, taking all the turnings of the road into account, of not improbably 1200 miles.

R. BARON (ED.).



# A LIST OF THE MOST COMMON FISHES, MOLLUSCA AND CRUSTACEA OF THE SOUTH-EAST COAST OF MADAGASCAR;

WITH NOTES ON THEIR APPEARANCE AND HABITS.

*Alangàto*. A Periwinkle. (*Littorina* sp.?)

*Alangàtondriana* (*alangàto*, periwinkle; *riana*, waterfall). A mollusc newhat like a Whelk, generally found in rapids, whence its name. (*Buccinum* sp.?)

*Aloàlo*. A large kind of *Antsèrotsèroka* (q.v.), but snout not quite so long; its flesh is much like that of a Pike, to which it is very similar in shape.

*Amàlona*. An Eel, greenish in colour.

*Ambànìlùkana* (*ambàny*, underneath, *làkana*, canoe). A river fish with dark brown body and very flat head, which looks as if it had been crushed, in which appearance it takes its name; flesh rather tasty.\*

*Ambàsivòlo*. A larger kind of *Ambasy*.

*Ambasy*. A small silvery river fish in shape like a Gudgeon; it has an enormous mouth for its size, and is full of bones.

*Ambàtovàzana* (*vàto*, stone; *vàzana*, molar teeth). A sea fish which comes also into the mouths of rivers; it has silvery scales and yellow fins. Both upper and lower jaws are four rows of teeth shaped very like small pebbles; these are for crushing crabs, its usual food. I have seen them weigh up to ten pounds; it is a good table fish. Its name is derived from its peculiarly shaped teeth.

*Amborindrina* (Betsim.), *Takapàlo* (Taimòro); (*àmbo*, high; *rindrina*, all). A silvery coloured river fish; the dorsal fin is very high; when taken from the water it has a strong smell of copper, but is fair eating.

*Ampàngandriaka* or *Valàlandriaka*. A Flying-fish. The native name means "Sea locust." (*Exocætus* or *Dactylopterus* sp.).

*Ampiny*. A sea fish, in shape and colour very like a Herring; it is full of long, thin and sharp bones.

*Anakatàfona*. A small silvery sea fish, much like Whitebait in shape.

*Angera*. A sea fish, with snout somewhat like a pig's, and spotted like Trout; it has sharp spiny fins, and usually swims in shoals. Its flesh is rather dry.

*Antàlantàlana*. A species of Mussel.

*Antsàntsa*. A general word for the varieties of Shark.

*Antsàntsafé*. Another species of Shark.

*Antsàntsavariaka*. A black Shark, with striped back; its flesh is slightly poisonous.

*Antsàntsongòngo*. The Hammer-headed Shark. (*Zygæna malleus*.)

*Antsèrotsèroka*. A sea and river fish, with long pointed snout like that of an Alligator and armed with rows of very sharp teeth; it is extremely voracious.

*Antsèva*. A large sea mollusc. The shell, which is very like that of the conch, is used by the Taimòro as a horn for calling people together. (*Triton* sp.)

*Atentina*. A sea fish, weighing sometimes as much as twelve pounds. It is spotted like a Trout and in flavour resembles the *Fiantsàra* (q.v.).

*Bàraràka* or *Bàràkàa*. A river fish, dirty brown in colour; its flesh is soft and not very palatable.

*Bèkalina* (Betsim.), *Vòivòy* (Taim.). A sea fish often entering river

\* This is doubtless the Sucking-fish (*Echeneis remora*), which attaches itself to the underside of canoes by the disk on the upper side of the head, hence its name.—EDS.

† When "river" is combined with "sea" in these descriptions, the lagoons of the coast are doubtless included in the former term, as they are more or less brackish.—EDS.

mouths; silvery in colour, with spots along the side; it has a large mouth and is easily caught with a line and hook and a piece of white cloth as bait, if this is drawn quickly through the water. It is too bony to be nice.

*Bètrika*. A small river fish like the *Ambasy*.

*Botàla*. A small sea and river fish; its back is a dirty dark green colour, the belly light yellow; it is covered all over with rough prickles. These fish inflate their bodies by filling their stomachs with air as soon as they are taken out of the water; if replaced in the water they rest like a blown-out bag; suddenly, out goes the air, and they are off like a flash. The natives will not eat these fish. (*Tetrodon fahaka*?)

*Botràndra*. A sea fish, which does not much exceed nine inches in length; it has a very rough skin, like a rasp, and has four beautiful white teeth, like human teeth, on both upper and under jaws.

*Fay*. See *Màlamàna*.

*Fèlapèla*. A small sea fish also found in river mouths; it is one of the prettiest fish on the east coast, being of a bright silvery colour, which glistens in the sunlight; it has a black streak over the eyes. The French name for this fish is *Lune*, doubtless from its moon-like silvery colouring. It is very good fried.

*Fiamainty*. A sea fish, very dark in colour, with enormous eyes. The flesh is coarse.

*Fiamay*. A sea fish, bright red in colour and often measuring three feet in length. The flesh is coarse.

*Fiambèla* or Horn-fish; the snout is elongated like a horn and rough like a rasp. Very rare.

*Fiampòtsy*. A sea and river fish, very silvery white in colour and slightly spotted. It is good eating. (*Chrysophrys sarba*, Forsk.)

*Fiana*. A river fish, silvery in colour, slightly spotted and with small scales; its flesh is rather coarse. (*Gerrisoyena* sp.)

*Fianàva*. A sea fish; elongated body with silvery colouring, and one line of bright spots on each side running from gills to tail.

*Fiantàra*. A sea fish only found on a rocky bottom; it has a peculiarly shaped mouth, which is quite red inside. It has perhaps the best flavoured flesh of all the sea fish on the south-east coast.

*Filamboay* (*filo*, needle, *voay*, crocodile). A small river fish about three inches long, with an elongated snout which is hollow like a pipe; it has two sharp ridges down the back and indeed looks like a diminutive crocodile, except for its lack of legs; this resemblance is denoted by its name.

*Fòny*. A river fish, dark brown in colour and spotted like a Trout. It is generally found where the stream is sluggish. The flesh is good.

*Fòza*. A common Crab.

*Fòzabé*. A large species of sea Crab.

*Fizahàzatra*. A small dark river Crab, with very red claws.

*Fòzalànana* or *Fòzatay*. A small pale red-coloured Crab; at certain seasons of the year it congregates by hundreds on the sea shore, scuttling off into the waves at the slightest alarm.

*Hàna*. See *Màsovoàtoàka*.

*Hénalàhy*. A sea fish, yellowish in colour and good eating; it is very rare, and the fishermen in the south, when they succeed in getting one, divide it with each other for luck.

*Hintana*. A river fish; purple colouring, with darker purple stripes running down from back to belly. It is generally found among weeds; it has four long spines, one on the dorsal fin, two just behind the lower part of the gills, and one close under the tail. These spines are very poisonous, and any one pricked by them suffers great pain for several hours, the parts adjoining the wound swelling enormously. I have not, however, heard of the wound ever proving mortal. The natives treat the swollen parts with hot fomen-

tations of the leaves of the wild lemon. Fishermen are very careful to cut off the spines immediately the fish is caught. The flesh is edible, but is rather dry.

*Hoditrévy*. A small species of Sole.

*Horita*. A small kind of Octopus found clinging to the rocks. The Malagasy esteem them highly, but I have found them gluey and sticky in the mouth, as well as rank in flavour.

*Horða*. A sea fish; it is sometimes five feet long and looks like a mass of red and white blotches; the teeth resemble those of the flying-fox bat. The flesh is coarse, but the head is considered a delicacy.

*Ikambina*. The Pilot-fish. Its name is possibly derived from the root *imbina*, a watch, guard or patrol.

*Kilimanatody*. The young of the *Zompona* (q.v.), when only from five to eight inches long. (*Mugil* sp.)

*Kótratra*. See *Tóna*.

*Ládintavia*. A river fish, white in colour and covered with a kind of slime which is thick like soapsuds; the fins are yellow. It goes in shoals, so that one haul of the net will sometimes bring in hundreds of them, which look as if they were all floating in a thick lather of soap. They make a croaking noise when taken out of the water.

*Lâmatra*. See *Vôania*.

*Lâvasaina* (*lâva*, long; *saina*, a flag). A river and sea fish, very like the *Amborindrina*, with four or five bright green stripes from back to belly. On its dorsal fin are several long soft floating threads, some of them twelve inches in length; from these it derives its Malagasy name, meaning "Long-flag."

*Mâhafotsy*. A river fish, somewhat like the *Fianpôtsy* in body, but with longer snout.

*Marânlôva*. See *Ramâtinônja*.

*Mâsovâtôaka* (Betsim.), *Hâna* (Taim.). A river fish, reddish brown in colour, with beautiful bright red eyes; the two front teeth on both upper and lower jaws project like those of a rat. It is the most prized for the table of all the river fish, as it is like a Trout in flavour, and the flesh is salmon coloured when cooked. Its Betsimisâraka name is evidently derived from its red eyes (*mâso*, eye; *vâtôaka*, overcome by rum), and means "Drunken eyes."

*Mâtamana* or *Fay*. A species of Sting-ray. The younger fish have only one spine, but the adult fish have two, placed about six inches from the tip of the tail. The flesh is very much like that of a Skate.

*Matavikéty*. The young of the *Tôfoka* (q.v.), when only from five to eight inches long. (*Mugil borbonicus*, C.V.)

*Mihóngy*. A very voracious sea fish, shaped like a Pike; of the same family as the *Aloalo* and the *Antserotsiroka*, but much larger.

*Olôvo*. A sea and river fish, dirty reddish brown in colour, and sometimes growing to an enormous size. I caught one which weighed 262 lbs. and measured seven feet long. It is very good eating, the liver especially being considered a great delicacy.

*Olôvoráty* (Betsim.), *Tongàky* (Taim.). The young of the *Olôvo*.

*Orambâlo*. A very large river Shrimp (or Prawn) always found near rocks, whence its name (*vâlo*, rock or stone).

*Orampâtsa*. A very small Shrimp which is caught by thousands and dried for food. It is sometimes called *Pâtsanôrana*.

*Orana*. A general word for Shrimps and Prawns.

*Orankosia* or *Orandâva*. A sea Shrimp (or Prawn) which at certain seasons enters the mouths of rivers, probably to spawn; it is long and slender in the body, with immense feelers, sometimes a foot long. One of its names refers to its length (*lôva*, long).

*Orantalángy*. A river Shrimp (or Prawn), very solitary in its habits and generally found where there is a sandy bottom. It is peculiar from having

one large claw, the other being hardly noticeable.

*Orantsimba*. A large sea Shrimp (or Prawn), very like a small Lobster in size, but with no claws.

*Oranzâno* (*Oranjâno*?) (Taim.), *Rafitrâho* (Betsim.). A Crayfish.

*Papàky*. A species of Oyster.

*Ramangitika*. A name for the *Tôna* (*q. v.*) when they get very large.

*Ramâtinônja* (Betsim.), *Marânoláva* (Taim.). Small species of *Tôho* (*q. v.*), which at certain seasons of the year are thrown up by thousands on the beach. Its Betsimisarakana name refers to this fact, meaning "killed by the waves" (*mâtý*, dead, *ônja*, wave).

*Rantso*. A sea fish, very like the *Tôfoka*, but darker in colour.

*Sariy*. A river fish, dirty green in colour; it almost always has a river bug (called by the people *Haondràno*) clinging to the upper side of its tongue, at the root. Its flesh is coarse when fresh, but well flavoured if smoked.

*Sàvo*. A sea fish, variously coloured and often measuring three feet long. Its flesh is coarse.

*Takapàlo*. See under *Amborindrina*.

*Tôfoka*. A sea and river fish very nearly allied to the *Zompona* (*q. v.*); they might be called sister fish, for where there is a shoal of *Zompona*, there are sure also to be *Tôfoka*. It is the same in shape and colour and in the form of the scales as the *Zompona*, but not quite so large. It has a habit of jumping out of the water and, if chased by a Shark, it swims at the surface with great rapidity, making enormous leaps into the air every now and then and often doubling upon the enemy. (*Mugil borbonicus*, C.V.)

*Tôho*. A river fish, of dirty flesh colour, and always found near the bottom. It has a big mouth, and is poor eating.

*Tombakàfo*. A small sea fish often found around river mouths. It is silvery in colour, with small scales, and has four black lines running down from back to belly. The flesh is poor.

*Tôna* (Betsim.), *Kôtratra* (Taim.). An Eel, dark in colour and *fady* or tabooed with most of the coast tribes.

*Tongûky*. See *Olôvoratý*.

*Trânosàbatra* (*tràno*, house, sheath; *sàbatra*, sword). A very elongated sea fish, taking its name from its likeness to a scabbard.

*Tréotrôka*. A clean run sea fish, always found around river mouths; it affords good sport with rod and line, the hook being baited with shrimp and drawn along the surface of the water, as in fly fishing. The fish leap at it eagerly and make a good fight for life. I have seen them from half a pound up to 30lbs. in weight. They are very good eating.

*Trôzona*. The Whale (*Balæna australis* and *Physeta macrocephalus*).

*Tsarasômotra*. A sea fish, with silvery scales; it swims in shoals, and has a knob on the tip of the nose and another under the mouth. It has several long filaments like a Barbel, from which fact comes its name (*tsàra*, good; *sômotra*, beard). It is very good eating. (*Polynemus tetradactylus*, Sh.)

*Tsialàla*. A diminutive species of Cockle.

*Tsiamidy*. A small river fish, mostly found in streams and marshes.

*Tsibàrahàntona*. A small river fish, white on the belly and with dark green back.

*Tsikàboku*. A small river fish, brown in colour, with very large head.

*Tsindràno*. A river fish, always found in rapids; it has a very hard head and strong teeth.

*Tsôranôrana*. A peculiar kind of crustacean, partly resembling a Crab and partly a Shrimp.

*Tsitôholànana*. A river fish, a large species of *Tôho*.

*Valàlandriaka*. See under *Ampàngandriaka*.

*Vàno*. An edible river fish, dirty brown in colour; it has two serrated

poisonous spines behind the gills, but these are not so dangerous as those of the *Hintana* (q. v.).

*Vanovàno*. A species of Sand-eel, always found in the sand at the mouths of rivers; it is tinted flesh-colour; it is poor eating, being very hard and tough. (*Ophichthys orientalis*, Mc.A.)

*Vàravàrana*. A river fish, reddish brown in colour.

*Variry*. A sea fish, with small scales and silvery coloured body; the under jaw protrudes somewhat beyond the upper one, and both have very sharp teeth. It is a vicious fish, biting at everything within reach when taken out of the water. It is very good eating.

*Vátanòvy*. A small sea fish, found also in river mouths on a sandy bottom; it is light brown in colour, with very white flesh resembling Whiting in flavour.

*Vavàno*. The Saw-fish, which sometimes comes into the rivers in search of food. One was caught in the River Mánanjàra which measured 14 feet from tip of saw to end of tail; the saw alone was 3 ft. 6 in. in length, 7 in. broad at base and 4 in. at tip. The flesh is coarse eating, but the liver is very palatable. (*Pristis* sp.)

*Veràngambily*. A sea fish, with silvery tinted elongated body and very sharp teeth. It is only found in the rivers when the *Vily* (q. v.) come in. It is good eating.

*Vtràngàrana*. A small shell-fish, somewhat like a Cockle in shape.

*Viso*. The Porpoise.

*Vilibáhoka*. This fish resembles the *Vily* (q. v.), but is smaller.

*Vililáva*. Another species of *Vily*, with green back, and like a small Eel.

*Vilimángo*. Another species of *Vily*.

*Viliveránga*. A large species of *Vily*, bright red in colour and about three inches long. They swim in shoals, and wherever they appear the water looks red from their great number.

*Vily*. A tiny little fish which comes into the rivers from the sea at certain seasons in myriads; it is generally driven in by larger fish which feed on them. The Malagasy catch them by using a piece of cloth as a net and sweep them on shore by thousands.

*Vòadèba*. The young fry of the *Saròy* (q. v.).

*Vòàna* (Betsim.), *Lamatra* (Taim.). A sea fish with sharp snout; when seen it is always leaping high out of the water.

*Vàivòy*. See *Bikàlina*.

*Vòvòka*. A river fish, brown in colour and spotted, with pointed snout and rough skin. It has two sharp plates behind the gills, which cut like a razor.

*Zébozèbo*. The young fry of both the *Zòmpona* and the *Tòfoka* when from 2 to 3 in. long. They swim in shoals and are a good substitute for Sprats.

*Zikorima*. A sea fish like a Sprat, with reddish eyes and hard lumps on the back of the head.

*Zòmpona*. A sea and river fish, a kind of Mullet, only feeding on soft substances such as weeds. It is a clean run fish, silvery in colour, with large scales; it generally swims in shoals, and is probably the best known fish along the east coast. When fresh from the sea, its tail and fins have a yellowish tinge, and it is then splendid eating, but if the tail and fins have not this tinting, it shows that the fish has been for some time in the fresh water of the rivers, and the flesh has a muddy flavour. Its size varies from 9 in. to 30 in. long. The coast Malagasy are very fond of *Zòmpona*, and they have a peculiar expression which illustrates this. When a person is dying and is so far gone that the case is a hopeless one, some outsider is almost sure to say: "*Tsy hámàna Zòmpona kòà izy*," i.e., "He (or she) won't eat *Zòmpona* again." (*Mugil* sp.)

*Zóngozòngo*. A small species of Sea-eel of the *Amàlona* type.

*Zòno*. A small fish mostly found in streams and marshes.

JOTTINGS OF A JOURNEY TO THE SOUTH-EAST  
OF MADAGASCAR.

THIS paper makes no pretensions to give an exhaustive account of my journey to Fàrafangàna on the south-east coast of the island.

My purpose goes no further than to jot down a few of the incidents and curious things that I met with, likely to be interesting to the general reader of the ANNUAL.

The road from Tamatave to Andóvorànto, with its park-like views and charming lagoon scenery, is too well known to make it necessary for me to try my hand at a description of it. From Andovoranto to Vatomandry is a fair day's journey. The road runs along the scrub-covered line of sand that lies between the sea on the left hand, and the lagoons on the right. In many parts the path is narrow and closed in with dense vegetation, making progress slow and tedious, and calling for alertness and frequent dexterous bendings of the body on the part of the traveller seated in the palanquin, in order to avoid being sharply lashed in the face by the crowding tree-branches.

It was dusk on a certain day in the early part of June of last year, when the wearied bearers having lifted my palanquin off their aching shoulders, we stood together on the north bank of the Vatomandry river close to its mouth. The river at this point, owing to sand-banks impeding its free access to the sea, spreads out into a fine lake-like expanse of water. Peering across the stream in the fast fading light, we could dimly see the town of Vatomandry on the other side, and could also descry a number of canoes drawn up on the bank, near which stood a small group of men and boys. Presently three or four of them separated from their fellows, and, selecting one of the canoes, scrambled into it and began rapidly paddling towards us. They proved to be scholars sent by the evangelist stationed at Vatomandry to ferry us over the water. Stepping into the canoe, we at once pushed off, and the lads using their paddles smartly, despite a strong sea-breeze, which raised some biggish waves on the broad stream, soon landed us safely on the opposite bank, where a hearty welcome awaited us.

Compared with most of the ports on the east coast of Madagascar, the trade of Vatomandry is considerable. Large quantities of *Rofia* fibre are exported, the inland districts abounding in the *Rofia* palm. In most of the business houses are to be seen powerful presses at work squeezing the loose bulky fibre into compact bales. The anchorage for vessels at this port, as indeed in nearly all the eastern ports, is of a dangerous and unsatisfactory character, owing to the presence of reefs and strong and variable currents, and the general prevalence of the south-east wind causing a heavy swell and surf. Vessels are obliged to lie two or three miles out in the offing, where they incessantly toss and labour on the long rolling swells. Cargoes are loaded and unloaded by means of stout, well-built and buoyant surf-boats, sharp at both ends, and having a carrying capacity of from four to six tons. A crew of sixteen or twenty men, by means of large oars, pull these boats



through the frothing waters. There are no rowlocks or pins on which to rest the oars, but a purchase for pulling is obtained by means of loops of tough withes fastened to the gunwale, in which the oars are inserted. The boats are steered by a large oar held in position in the same way as the smaller oars. In bad weather it often costs a crew several hours of hard strenuous labour to reach a vessel, and not unfrequently the sea is so boisterous as to altogether prevent communication between ships and the shore for a week or ten days at a time.

During my stay at Vatomandry I was told of some curious beliefs held by the boatmen and townspeople generally. They assert that the spirits of the dead, on leaving the body, plunge into the wild mass of waves that ever break and froth on the group of rocks lying a short distance from the beach, and there dwell and exert authority as lords and guardians of the sea. These disembodied spirits are supposed, when their goodwill is secured, to be able to still the most furious tempest and command fair weather for those who duly honour them. Should their anger, however, be excited, they use their power to raise stormy unfavourable winds and increase the surf at the bar, and so make it impossible for the boats to ply to and fro.

One man named R—, I was informed, is believed to possess great influence with these guardian spirits of the deep. They are very complacent to his wishes and commands. Hence it is indispensable for the boatmen to secure the services of this man, so that accidents may be avoided and fair weather be granted them in which to pursue their avocation. Consequently, when a laden boat is ready to start on its trip to the ship in the offing, R— is informed, and it is deferentially intimated that his good offices are required. As the boat moves out from the river mouth, R— stands on the beach, giving directions which way to pull, and at the same time he intimates to the spirits that the boat is under his special care, and that they must use every endeavour to give it a successful passage.

Naturally R— cannot be expected to render these valuable services for nothing. For every trip which a boat makes he receives two shillings, and as a boat in good weather will make three trips a day, and in busy times five or six boats will be afloat at the same time, it is easily seen that the fortunate R— makes a very good thing of the business. Of course the boatmen look with the greatest respect on the man and dread giving him offence in any way, as offenders, the next time they go on the water, may expect a serious accident to happen to them, even if they escape drowning. A story is told of the loss which befell a Creole trader some three or four years ago, owing to his refusal to duly honour R—'s position and influence with the spirits. A vessel had arrived bringing a cargo for him, which he was anxious to get stored in his magazines as speedily as possible. He thought, however, that he could safely dispense with R—'s services and declined to pay him his dues. The incensed R— thereupon threatened disaster. The weather was very bad at the time; but circumstances being urgent, the trader, despite the risk, determined to run his boats. He suffered for his temerity, for on returning from the ship, one of the boats was upset, and its load went to the bottom. Of course popular belief attributed the accident to the malevolence of the water-spirits, who had duly received

instructions from the aggrieved R—to “pay out” the unbelieving and contumacious trader. “Ah!” was the general exclamation, “you see what comes of quarrelling with the master of the water.”

When a boatman falls overboard and is never seen again, it is not supposed that he is drowned, in the ordinary meaning of the word, but that he is at once seized by the spirits and taken to their abode. This belief may have arisen from the fact that the body of a drowned person is very rarely recovered, being driven to and fro by the wash of waters caused by the meeting of the current from the river and the swell from the sea. Down in this spirit-world under the waters life is thought to go on much as it does on earth. A king there rules over his subjects, boats ply to and fro, and the ordinary employments and habits of life in the upper world are found in a shadowy form there also. A story is current of a steersman well known for his skill, who one day attempted to perform his duties while drunk. The boat he was steering had got a considerable distance out, when the man, owing to his intoxication being unable to keep his feet, slipped and fell overboard and was drowned. His relatives explained the accident by saying that the spirits, knowing his skill, had taken him to employ it in their service in the spirit-world. A few nights after the man's death his widow dreamt of him. In her dream her husband appeared and asked for his comb, a pair of scissors with which to trim his hair, and the little waterproof bag in which he had been accustomed to carry invoices and letters to and from the ships. In the full belief that he required these articles in his life with the spirits, she threw them into the sea the next morning.

A few weeks before my arrival in Vatomandry a curious incident occurred which illustrates the superstitious credulity of the Betsimisaraka. A report got abroad that a god or demon, or supernatural being of some sort, called Boriambo, of a very ferocious disposition, was shortly to appear amongst them. The report was implicitly believed and naturally created great alarm. According to general expectation, Boriambo was to come from somewhere in the north, and the scared imaginations of the people pictured him prowling about the outskirts of the towns and villages in the dusk of the evening, and tearing to pieces and devouring any unfortunate and belated wretch whom he might come across. Of course they eagerly and anxiously cast about for means to protect themselves from the violence of this merciless being. With all his strength and ferocity, Boriambo, according to the popular notion, had one weak point—his nose. Taking advantage of this little peculiarity, one knowing individual suggested that he might be circumvented by a string of cayenne pepper pods worn round the neck; the scent of the pepper irritating his delicate olfactories would effectually deprive him of the power to do any harm to all thus protected. The idea was seized upon with glad avidity by the apprehensive people, and hundreds of them were to be seen wearing necklaces of the talismanic pepper pods.

One family, it is said, nearly came to grief during this time of general fright. They were simple-minded folk and, in their dread of the evil Boriambo, they were ready to take up with any wild idea to ensure their safety. Some men of the baser sort, seeing their excessive alarm, thought them fair game for a practical joke. “Yes,” said they to the father of the family, “it is well to wear the pepper pods round your necks, but, to

make doubly sure, we strongly advise you to fumigate yourselves by burning a quantity of pepper and letting the house be well filled with the smoke. Do this, and we guarantee that Boriambo will never dare show his nose near your dwelling." These words of the wicked ones fell soothingly on the anxious heart of the father, and they seemed unto him as the voice of wisdom itself. One night, after having carefully fastened door and window, he gathered his trusting wife and children around him and prepared to carry out the sage counsel. Upon the embers of charcoal in a small stove used for heating flat-irons a couple of handfuls of pepper pods were thrown. The cheerful crackle of the pods inspired them with hope, but alas! in a very short time the pungent power of the titillating smoke began to manifest itself in tear-producing sneezes and choking gasping coughs. Their first impulse was to rush outside into the fresh air, but a moment's consideration led them to see that this course might bring them right into Boriambo's clutches. Restrained by fear of the monster, they made up their minds to choke and cough and sneeze a while longer. At length, however, the agony became unbearable, and they one and all decamped. The story got wind amongst the neighbours, and the deluded innocents were sorely "roasted."

Two hours south of Vatomandry we came to the village of Maintinàndry, near which is a Betsimisarakà cemetery. It lies under the shadow of the trees by the sea-beach, about sixty or seventy paces from the reach of the water. The bodies are enclosed in rough coffins made by hollowing out a tree-trunk. The lids are not fastened down in any way, but lie loosely on the rest of the coffin. Some of the coffins rest on trestles about four feet high, others are merely placed on the ground. There were sixty coffins in this resting-place of the dead. Some were old and fast falling to pieces, disclosing the bleached skeletons and the remnants of the grave-clothes.

Mahanoro, once of considerable commercial importance, now presents all the signs of a town in a state of decay. Its trade has greatly fallen off since the war of 1883-1885. Vanilla is pretty extensively cultivated on the low lands in the vicinity, but although the bean is said to be of good quality, there seems to be a lack of the special skill and knowledge required in its preparation to place it advantageously in the market.

By the kindness of the Governor of Mahanoro, who had shewn me much hospitality, I was provided with a large roomy canoe for crossing the river Mangóro, which enters the sea about six miles south of the town. Banked up by the sand-bar at its mouth, the river spreads out into a broad noble-looking stretch of water. On crossing we found it to be very shallow in many places, and we had to take a devious course down the channels in order to avoid the shoals and mud-flats that impede its navigation. Notwithstanding all the care of our boatmen, however, we frequently ran aground.

A little before noon on the third day after leaving Mahanoro I reached the town of Sakaléony. The road during the morning led through the scrub, which in places opened into fine large spaces of grassy land grazed by numerous cattle. A thin penetrating rain, occasionally breaking into heavy showers, fell during the whole morning. This part of the road bears a very evil reputation, and the natives give it a name

which implies that the traveller needs to be constantly on the alert, with both eyes wide open. On entering the town, the first object that met my eye was a big brawny fellow lying under an open shed, with one leg fastened to a massive piece of timber. He was a madman, and in his fits of fury had scooped out a hole in the sand five or six feet deep, in which he crouched almost naked. On enquiry, I found he was a victim of that terrible scourge of the coast populations—rum. The townsfolk had long borne with him, but his paroxysms of madness becoming more frequent and dangerous, they were at length compelled to restrain him in the manner above described.

While waiting for the cook to bring in lunch, I was suddenly startled by loud shouts and singing. Looking out, I saw a procession just starting from a house close by. The central figure was a young woman, whose vacant and dazed eyes clearly betokened that something was amiss with her brain. She had been ill for a fortnight, so the people said, and all the means they had hitherto used to bring her back to her right mind had failed. Her condition, according to my informants, was caused by an evil spirit having entered into her, and a noted medicine-man had been called in to exorcise it and give the poor patient a chance of regaining her health. In front of the procession walked a man carrying a stick of sugar-cane. Next came two men holding upright in their hands small wooden swords marked with differently coloured horizontal lines on the blades, and the interspaces filled in with black, white and red dots. Close behind them walked the demented patient. She was most curiously got up for the occasion. Broad white lines had been drawn across the forehead and continued down the cheek-bones close to the ear and round the chin; another line of white ran across the cheeks and over the bridge of the nose, the intervening space being dotted with dabs of white, red and black colouring matter. Across the bared chest lines had also been traced, and these were separated by rows of coloured dots similar to those on the face. About twenty women, with shoulders bare, and decorated with white lines on the face, crowded round the possessed woman and kept close to her as the procession moved along. Following the woman were several men wearing wreaths of leaves. An assistant carried a folded leaf containing medicine, which had no doubt been compounded strictly according to the rules of the medicine-man's occult science, and made effective by having had the appropriate incantations pronounced over it. Into this concoction the man from time to time dipped a bunch of twigs and sprinkled the people, especially the patient. I am not able to give the ingredients composing this medicine. Perhaps it was a "patent," and my impertinent curiosity as to its composition was firmly ignored. To my deep regret, which will no doubt be shared by all professors of the healing art, I am therefore unable to make what assuredly would prove a valuable addition to the pharmacopœia of Western medical science. Another assistant bore a potsherd, on which a quantity of gamboge was burning. As the procession moved on, singing, accompanied by clapping of hands and beating on the blade of a spade, was kept up. Passing through the town, the procession took a narrow path leading through the thick brushwood down to a lagoon about three-quarters of a mile away. Occasionally a pause was made, when the leader would suddenly turn round

facing the girl and address some very violent threats and remonstrances to the intruding spirit, while some of the women, bare to the waist, danced and gesticulated wildly round the sick woman, at the same time giving forth hideous screeches. In about half an hour, the edge of the lagoon was reached, and preparations were at once made for carrying out the concluding part of the ceremony. The stick of sugar-cane and the wooden swords above mentioned were placed upright in the ground, the cane between the swords. A mat was then spread upon the grass, and the patient laid in a reclining posture upon it. After a short speech and prayer by the medicine-man, the woman was then rolled up in the mat, and two men, holding her by the head and feet, soused her in the water. Immediately on issuing from her bath, the breathless dripping patient was seized by the wrist by a powerful young fellow and dragged full speed back to the village, pursued by a yelling crowd of men and boys, who threw stalks of cardamom at them. The idea evidently was that the woman must be got back to the village as quickly as possible, lest the spirit, which it was hoped had been driven away, should regain possession of his victim. Reaching her house, the poor woman was dried, and a change of clothes put on her. I was told that after a while it would be tested whether a cure had been effected or not in this way amongst others: two eggs, one cooked and the other raw, would be placed before her, and if she chose the cooked one, clear proof would be furnished that the spirit had actually left her. I saw the woman just before leaving the town, but to my incredulous eye her bewildered heavy look did not afford evidence that the violent methods adopted had been of much use. The proceedings and course of treatment would hardly meet with the approval of the physicians of a lunatic asylum.

Three-quarters of an hour after leaving Sakaleony we reached the ferry of Nòsivàrika, where we experienced one of the many annoyances to which the traveller along the coast is subjected. A lagoon about a quarter of a mile wide lay before us, which had to be crossed before we could prosecute our journey. But, unfortunately for us, the canoes were on the other side of the water at the time of our arrival, and, notwithstanding our loud hails, none of the people in the village on the opposite side would take any notice of us. To add to our discomfort the rain came down in torrents. Again we shouted, throwing no little wrath into our voices, and after a long interval were rewarded by seeing a man come out of a hut and slowly saunter to a high piece of ground, where he could get a good view of us. In our simplicity we trusted he meant to descend the bank and rescue us from our uncomfortable position. But no; to our disgust, after a long lingering look, he coolly turned his back upon us. Needless to say we did not invoke many benedictions on that man's head. Indeed, the bearers, drenched to the skin and shivering in the cold rain, displayed a range of objurgatory expression so varied, choice and vigorous, that I was fairly charmed and soothed. Again we raised a wrathful united shout, with the effect of bringing two or three heads to peer forth, but alas! they were as quickly ducked under shelter as the splashes of rain fell upon them. For an hour and twenty minutes we were kept waiting in the soaking downpour; and when the canoes were brought to us, we found them to be small, narrow, cranky things, that would only carry two or three passengers at a time.

Pushing off, we threaded our way for a short distance down a narrow channel bordered with dense vegetation and then emerged on to the open lagoon. Then the rain burst upon us most furiously, half filling the canoe, and turning the water into a mass of hissing steaming bubbles. However, we got across safely and liberally eased our minds on the unconscionable ferry-men.

X Passing by Mahambo, where nearly every soul was drunk, a convenient funeral being on hand at the time, and Ambòhitsàra, with its stone elephant (vide ANNUAL for 1878, p. 115), we hurried through Mahèla on to Mānanjara, where, from Mr. Connorton and his friends of the "Club," I met with the heartiest kindness and hospitality. I shall long remember the pleasant intercourse I had with them.

X Mananjara, or Māsindrāno, as it is called by the natives, has grown rapidly in importance during the last few years. Seven years ago it was but an insignificant coast town, but now it must certainly have not less than between three and four thousand inhabitants and a large and flourishing trade. As regards volume of business transacted and amount of imports and exports, it, to my thinking, runs Tamatave very closely. It is the emporium of the trade with the Bètsilèo and Bāra provinces, from which it draws large quantities of hides, rubber, rice, and other products.

From Mananjara to Fārafangāna is four days' good steady travelling. The scenery is of a similar character to that on the part of the road already traversed to the north. The path leads for the most part along the narrow stretch of wood-covered sand that lies between the sea and the lagoons, and frequently affords views of exquisite beauty. Now it leads through stately lines of the graceful *Filao*, by lemon-trees bending with golden fruit, and clumps of Travellers'-trees and *Rofia* palms expanding their broad fronds to the passing breeze. Anon it follows the margin of a still lagoon in its setting of richly varied foliage, whose placid waters occasionally eddy to the splash of a fish or the sullen plunge of a crocodile, and are flecked with the shadows of startled birds, and mirror the rapid flight of the wild ducks and the broad-winged bats. At times the path turns off on to the loose yielding sand of the sea-beach, along which the bearers toilsomely plod, until at length the traveller, wearied and dazed with the glare of the sand and the sight of the long ocean swells rolling in creamy cataracts over the coral reefs, hails with a feeling of relief an opening in the dense jungle that faces the sea, through which he can again pass into the quiet soothing shade and colour of the woods.

Passing over several interesting experiences amusing and otherwise—much otherwise sometimes—we come to Ambāhy, or, as it is often called, Fārafangāna. The town is situated between the Mānampātrana and the Mānambāto rivers, which bound it on the north and south respectively. From the western edge of the town extensive swamps, breeding a fruitful crop of fever, stretch far inland, and to the east is the ever-sounding sea. Fārafangāna is the chief town of the Taifasy tribe and is fast rising into a place of importance. Several merchant firms have established agencies here, and to me it seems very probable that a largely increasing trade will be done in the coming years. Mission work in connection with the London Missionary Society was begun some five

years ago, and already its beneficial influence is manifest. The station is occupied by Mr. and Mrs. Shaw, from whom I received a warm welcome, very grateful to me after the fatiguing tramp along the coast. I shall ever treasure the memories of the pleasant days I spent with them; and I must express my admiration of the self-denying, varied and telling work they are doing under very trying conditions for the natives amongst whom they have cast their lot.

During my stay at Farafangana, I made, in company with Mr. Shaw, several excursions into the surrounding country. On one of these trips we went up the river Manampatrana in the mission boat to look at a burial-place belonging to one of the clans living in the town. Knowing the susceptibilities of the people with regard to foreigners visiting the resting-places of their dead, we secured the consent of the headmen before starting. The sail of our boat, filled with a good breeze, urged us over the broad stream at a rapid pace, and in about an hour brought us near the *kibòry*. Fastening the boat to the bank, we followed a narrow path through the thick bush and soon reached a small clearing. In this open space a wooden shed, about 30 ft. long and surrounded by a strong stockade, had been erected. The roof was in a very dilapidated condition, large rents allowing wind and rain to penetrate freely. On the ground under the shed lay the bodies, side by side, the males separate from the females, and each wrapped in its own grave-clothes, and the whole covered by a large sheet of unbleached calico. We were not allowed to pass the protecting stockade to get a closer view. It was an eerie scene, and stirred the heart with thoughts and feelings of sadness. Round us were the solemn trees, from whose overhanging branches the withered leaves noiselessly dropped. Overhead spread a cold dull sky, across which dusky clouds slowly drifted. From the river came faint murmurs, as the waves plashed gently on the bank, and these, with the fitful sighs of the wind in the tree-tops, and the scarcely breathed whispers of the scared men, were the only sounds that broke the stillness. And there, lying before us, were the shrouded pathetic forms of the silent dead.

On another occasion we went to the village of Sàhafòza, which lies further up the stream, for the purpose of conducting a school examination. The scholars from three villages were present, and clear-skinned, wholesome, intelligent looking children they were. Here, as generally amongst these south-east tribes, I was struck with the easy, natural, self-possession of the people, free alike from cringing subserviency and impudent forwardness. While at Sahafoza, I was given a piece of information which forcibly shows the destructive nature of the tribal war which broke out in this region four years ago. An attack by neighbouring tribes at feud with them was then made upon the Taifázy, and from the three villages referred to no less than 400 youths and children of both sexes were captured and carried into hopeless slavery.

I paid a visit to Ankàrana, the capital of the Taisàka tribe, and also spent several days amongst the Taimóro, through whose lands the famous Mâtitanana river runs. But as my space is limited, and as it would require a lengthy paper to contain anything like a fair account of what I heard, saw and experienced amongst them, I must forbear.

Let me pass on to say a few words about the Zafisoro tribe, whose capital is Máhamàina, where also the Hova governor resides. The town is situated on the summit of a steep hill, and the Hova quarter is protected by three extremely strong stockades. The cutting and conveying of the massive timbers used in the erection of these defences must have cost the conquered people an enormous amount of labour. The work was imposed upon them by the first governor appointed after their subjection by the Hova, and effectually quelled any turbulent tendencies they might be disposed to indulge. Forcibly impressed by this specimen of his temper, they yielded entire submission to his authority.

Of the curious customs obtaining among the Zafisoro, let me give the following. They have very strict laws regulating the degrees of consanguinity within which persons may marry. The children of brothers and the children of brother and sister may not intermarry,\* and the prohibition even extends down to their great-great-grand-children. Should a marriage have been contracted, and a doubt afterwards arise as to the exact relationship of the parties, a careful investigation is at once instituted, and if it should appear that the parties are even remotely related within the prohibited degrees, the marriage is at once dissolved, and the husband is fined an ox.

A man wishing to marry a woman who has been divorced does not ask her from her parents, as is the usual custom, but from her former husband. Generally the husband is complacent and cheerfully gives his consent; in some cases, however, a stipulation is made by him that the first child born of the marriage shall be handed over to him and be regarded as his own. Sometimes the husband, retaining a spite against the divorced wife, shows it by placing all sorts of hindrances to her marriage with any one else. When a suitor makes proposals for her hand, the spiteful husband, throwing a small basketful of rice amongst the sand, says to him, "Yes, you can have her when you have picked up every one of those rice grains." It is said that some, impelled by their ardent feelings, attempt this arduous feat.

Another custom of a revolting nature is also practised by them. A wife dying, and the husband marrying again, his second wife surviving him marries a son by the first wife. This practice, I have heard, was followed amongst the Hova many years ago.

Polygamy is common, many men having three or four wives. When the wife is fairly treated by her husband, infidelity to the marriage vow on her part is strongly condemned by public opinion. I was told of a woman at Tangainóny, who had been found guilty of adultery, being terribly speared by the shocked people, who evidently meant to kill her then and there. She was, however, rescued and taken to Mr. Shaw at Farafangana for medical treatment, but the wounds she had received were so severe as to cause her death in a few days. A change for the worse in the ideas of the people with regard to this matter has taken place during the last few years. The people explain the declension by saying, "Many of us, both men and women,

\* Among most Malagasy tribes the marriage of cousins, except children of sisters, is extremely common, and the marriage of brothers' children is considered the most natural and proper kind of union.



during recent years, have come in contact with the Betsimisaraka (a tribe notorious for gross immorality), and we have learnt their ways."


When a husband divorces a wife, the only thing he gives her is a mat. For the man to take another wife before the divorced one has removed the mat from the house is considered a gross insult to the latter. She makes her wrongs widely known, and the man is fined a bullock. Should he refuse to pay the fine, the women of the village combine to attack his house, and they clear out everything they can lay their hands on, even driving away his cattle. The recalcitrant individual is made to sharply suffer for the dishonour done to the sex.

Should a conjugal quarrel occur, and the wife, in the heat of temper, exclaim, "I am a dog if I live with you any longer," she is at once divorced, and the men one and all solemnly swear never to seek her in marriage as long as she lives.

Little love and respect are shewn by the men to their wives and children; they look upon them as so many slaves fit only to toil, while they themselves idle about and take their siesta under the trees. They are astonished at the consideration and courtesy shewn by the Hova officials to their helpmeets. On one occasion, seeing the Governor and his wife carried in palanquins, the latter preceding her husband, the natives exclaimed, "What in the world does this mean? a woman being carried in a palanquin and going in front of her husband! What fools these Hova are, to be sure, thus to honour their women!" The only time a woman is carried is when she is ill, or when her body is laid on the bier to be borne to its last resting-place. It is related that a Hova who had asked the hand of a daughter of the tribe in marriage, and had been accepted by her parents, committed a fatal mistake by having her carried in a palanquin on the wedding day. The relatives of the bride heard of this scandalous proceeding, and in high dudgeon rushed after the marriage procession. Overtaking it, they tore the bride from the palanquin and yelled out, "Is our child dead, that she should be carried in this way?" They absolutely refused to allow the ceremony to proceed, and the unfortunately over-polite Hova had to mourn the loss of his bride.

Here I must bring my paper to a close. Leaving Mahamanina one bright sunny morning, we started on our homeward journey to Antananarivo. Six days' hard travelling brought us to Fianarantsoa in the Betsileo province. During its course we passed through a wild and thinly peopled country, broken by long valleys and mountain masses, amongst which the majestic cloud-wreathed head of Iabolakévo towered conspicuous. After a short stay at Fianarantsoa, we again took the road, which led over dreary wind-swept moors, and in seven days reached Antananarivo, wearied, but thankful to be at home again after our long tramp of twelve hundred miles.

THOS. LORD.



KING ANDRIANAMPOINIMERINA,  
AND THE EARLY HISTORY OF ANTANANARIVO AND AMBOHIMANGA.

AN article in last year's ANNUAL by the Rev. W. E. Cousins on the city of Antananarivo as it is at the present day, led me to think that many of the readers of this magazine would be interested in knowing something about the origin and early history of the present capital of Madagascar, at least so much of it as tradition has furnished us with. It is satisfactory to see that Mr. Cousins settles definitely the origin of the name Antananarivo. That it should so long have been a matter of doubt or dispute to those who are acquainted with the history of the system of conquest adopted by Andrianampoinimerina, and his immediate appointment of so many colonists to occupy the places he conquered, is to me the only cause of surprise. After he conquered Antananarivo he placed 1000 men there; hence the name Antananarivo, "Town of 1000 men."

In order to render at all intelligible a description of Antananarivo and Ambóhimánga, the two capitals of Madagascar, I must go back to their earliest history. The most thrilling parts of their histories belong to the reign of Andrianampoinimerina, of whom I intend to speak at length; but to arrive at his reign it is necessary to go still further back and review as briefly as possible some fifty or sixty years before his time, a period which I estimate to cover from the year 1740 to 1800.

I will not go further back than the reign of Andriamàsinaválona, who must have been king of Antananarivo somewhere between 1730 and 1750. He decided to divide Imérina (the central province) among his four sons. It was at Andohàlo he announced: "This is what I say unto you, O Imerina: I am going to divide Imerina into four parts, but those to whom I shall give them will not be monarchs, but merely lords of the manor." In short, during his lifetime the king divided the land among his four sons in the following way:—

- (1) Andriantsimitóviáminandriandràzàka, at Ambohimanga;
- (2) Andrianjakanaválomandimby, „ Antananarivo;
- (3) Andriantómponimérina, „ Ambóhidratrimo;
- (4) Andrianaválonimérina, „ Ambóhidrabfby.

These four princes reigned simultaneously, and we thus see that at this period Ambohimanga was a dependency of Antananarivo. As the history of Ambohimanga is part of my paper, I may here digress briefly to show how it came into the hands of the father of these four brothers. The first inhabitant of Ambohimanga is said to have been Andriambórona. King Andrianampoinimerina having one morning from Antananarivo espied smoke rising out of the trees at Ambohimanga (which was then called Tsimadilo) sent to enquire what it meant. His messengers found Andriamborona busy chopping wood, and asked him whether he was a friend or a foe. He replied that he was a friend. Upon hearing this, and being told also that the town was a very pretty place, the king said to him: "Let us live together, and I will place my son there." But the living together meant that Andriamborona was shifted

out of his dwelling-place. After being turned out three times successively from each new place he had established, he eventually died and was buried at Andrànombóahangy. His dying request was: "Bury me with my feet to the west, so that I can kick Màrovàtana, for they are very bad people there." So much for the early history of Ambohimanga.

During the lifetime of their father these four sons were continually at war and decimated the people. There was a wise counsellor named Andriamampandry who constantly warned the old man of the way his sons were ruining the country, but he always gave his admonitions in an allegorical form. One day he called on the king with four hawks tied up in a basket, and when the king asked him what he had brought, he untied the basket and let the birds loose. The hawks consequently flew violently about the house, and by the flapping of their wings detached the soot from the roof, smothering and half choking the king, who asked Andriamampandry what he meant by it. The counsellor replied that the four hawks represented his four sons, and told him to ponder over the rest. (From this we see that the kings in those days lived in a common one-roomed house, with the fire on the floor, and not in a Silver Palace or any such building as the present royal residences.)

Later on, this same counsellor advised the king to assemble all the people at Andohalo, which assembly or *kabàry* took place on a certain day. History says the place was crowded, even the women and children being all present. When all the people were duly assembled, Andriamampandry set free a bull from the lane at the east of Andohalo, which caused a panic in the crowd. People were crushed to death, limbs were broken, and women with child, it is said, gave premature birth. So the king asked to whom the bull belonged, whereupon Andriamampandry came forward and admitted that it belonged to him. "It belongs to thee," said the king, "and thou hast let it loose to kill my people!" "Well, and if you kill me for it," answered the counsellor, "my few drops of blood will not be sufficient to soak the earth." There was in fact a terrible disturbance, and the people returned home. And the king, after reaching his palace, sent for Andriamampandry and demanded the meaning of his conduct; but he answered: "A few people like that killed, and you make such a fuss about it!" "My people are killed, and should I not be sorry?" answered the king. And Andriamampandry replied in the following fashion: "Know then, O Andriamasinavalona! You have many sons and you love them all, you give them each a kingdom, and they are warring against each other, and your people are oppressed. It is he of Ambohimanga who is capable above them all and is destined to reign." And the king, we are told, bowed in submission to his minister's allegory, which was merely meant to show that the king's four sons caused the death of many more people than did the bull in the crowd.

One more anecdote is necessary to the thread of my story to show how he of Ambohimanga, among the four sons, was destined to be the direct ancestor of the present rulers of Madagascar. Before going to his final rest the old king invited the aforesaid counsellor to pay a visit to each of his sons, and by some symbolical action to test their character and destiny. Thus, to Andrianjakanavalomandimby of Antananarivo, the eldest son, the king's counsellor took a present of a box of honey,

as it is always the custom, when paying a visit, to carry some present. But the inmates of the house were too anxious to ask him what he had brought, and on receiving the honey merely thanked him and wished him God-speed, and then set to work to eat the honey, king and slaves all together. "That is a honey-box without a lid," said the counsellor, after he got outside. This king lived in the part of Antananarivo now called Ambôhitantely ("Village of honey"), and it owes its name to the above incident. As I must confine my history to Antananarivo and Ambohimanga, I omit the two other tests, and will speak of that employed to gauge the character of him who reigned at Ambohimanga. Andriamampandry called upon him, carrying as a present a hatchet and a coil of rope. The king of Ambohimanga met him at an outlying village and received the hatchet and the rope, and thereupon invited the king's counsellor home, killed the fattest ox he could find in his honour, and invited him to spend the night there. On the following morning he loaded the counsellor with a basket of meat for his wife; the neck of an ox as symbolical of the hatchet, and the large intestines as symbolical of the rope, being added as a return for the presents. And the king's counsellor was astonished and exclaimed: "This man is thorough throughout, he remembers my wife, and he even does honour to the hatchet and the cord; he is the man that must rule the people, he thinks of everything."

But the old king and his counsellor wanted yet another omen as to which of the four was destined to be the chief one. He with his minister therefore invited all four of them to come and sleep at his house, and, as was the custom, they all slept in a row (*lâpa-bé*) on a mat. In the middle of the night the king and his minister struck a light (i.e. blew up the fire) to see how their positions had changed in their sleep. He of Ambohimanga had hoisted himself higher up on his pillow; he of Antananarivo had slipped off his pillow; the Ambohidratrimo king had slid crosswise into the middle of the bed (mat); while Andrianaivalonimerina was lower down still. "What do you understand by that?" asked the king of his minister. "Know for thyself," was the reply, "art thou not a king?"

Old Andriamasinavalona died by being kicked out of bed by his wife (the former bedsteads were very high), and he expired cursing her. Of his four sons mentioned above there is nothing more to say which is relevant to my subject. These four kings died in their turn and were succeeded by four more, being their respective sons, as follows:—

- |                            |                   |
|----------------------------|-------------------|
| (1) Andriambêlomâsina,     | at Ambohimanga;   |
| (2) Andriampônimerina,     | „ Antananarivo;   |
| (3) Andriamânanimerina,    | „ Ambohidratrimo; |
| (4) Andrianavâlonâmbozâfy, | „ Ambohidrabiby.  |

Now Andriambelomasina of Ambohimanga had ten children, one of whom, Ranavâlonandriambêlomâsina, was the mother of Andrianampoinimerina, the hero of my story. Like all great men, he was born under extraordinary circumstances, that is to say, in this case, on the first day of the first month or Alâhamady. In Madagascar every one's destiny is determined by the phase of the moon at his birth, and this child's destiny was the most powerful of all. To this day, at sunset on the day of the new moon of Alahamady, the whole of the cannon in Antananarivo fire a salute in remembrance of Andrianampoinimerina.

Whatever of the prowess afterwards displayed by him may have been due to the condition of the moon at his birth, I do not hesitate to attribute the most of it to the natural inheritance of his grandfather's disposition. Andriambelomasina seems to have been of an intrepid character; he drove off the Sakalava, and, with the aid of his very large family, extended his dominions in a masterly manner.

In the meantime, what was the king of Antananarivo doing? As predicted of his father by the omen of slipping off his pillow, Andriamponimerina's reign was a failure. He led a Sakalava chief to try and take Ambohimanga, but did not succeed. Then came a great famine in the land. There was not a grain of rice to be had, and the people dug up the *Azoko* herb (*Vigna angivensis*) in order to eat the roots. Half the people died while digging, being too exhausted to work. They ate the roots raw, not being able to wait while they were cooked. The faces of the people changed; their mouths became brown and dry, and hence the famine was called the *Mavovava*. The number of deaths was frightful. There was a second famine, not so severe, later on, and a few people had rice; but they had to cook it at night and in secret, for if the smell of rice being cooked was discovered, the people fought like wild beasts for it. During the second famine Andriamponimerina died, and was buried in one of the "Seven houses" at Antananarivo (a row of seven ancient royal graves a little to the north of the great palace of Manjakamiadana, in the royal courtyard, each being crowned by a small wooden house, hence the name "*Trano fito miandàlana*," i.e., "Seven houses in a row").

Andrianampoinimerina was now a lad. It can be imagined, in the complete absence of dates, how difficult it has been to weave a connected history, but there is little doubt we have come to somewhere near the beginning of the present century. The following account of how Andrianampoinimerina, who was then called Rambôasalàmatsimarôfy, or, for short, Rambôasalàma, was blessed by his grandmother as a sign of his becoming king is not without interest.

One day Ramboasalama rose early in the morning and went and borrowed eightpence from a friend in order to go and visit his grandmother, or, more properly speaking, his great-aunt Ramôrabè, who was the wife of the king at Ambohidratrimo. With the money he bought a box of honey and some shrimps to carry to her as a present. He announced his arrival at the gate of the royal enclosure, and Ramorabe was informed that a visitor desired to see her. She accordingly consulted the *sikidy* (divination), and the *sikidy* was favourable to the visitor. It seemed a long time to be kept waiting, and Ramboasalama sent in a second message to say that her grandson from Bètsimisaratra wished to call on her. "Very well," said the old lady, "bring him in." "But he has no clothes, Madam," replied the servants, "and he is ashamed to appear as he is before your sons." Then Ramorabe asked: "What has he got on?" "Only a dirty piece of *rofia* cloth," they replied. So Ramorabe said to her husband: "Hand me your *lamba* and your loin-cloth." And the servants took the *lamba* and the loin-cloth to Ramboasalama, and he put them on before going in. When he arrived at the door, every one made way for him, as for someone whom God had destined to reign, and even the children of the king gave way before him. Then Queen Ramorabe took the water which is used for

conferring a blessing (lit. "blowing from the mouth") upon monarchs who pay a visit, and she blessed him three times before letting him come in. "Go round the room (or house) three times," said Ramorabe. And when Ramboasalama reached the post in the middle of the house, she blessed him again and then bade him stand at the post to the north of the house, where she again blessed him, after which she invited him to sit down on the north side of the hearth (the place of honour in an ancient Malagasy house). And when he was seated, he saluted the queen. And Ramorabe said to her servants: "Kill a fowl, and roast it here before my eyes;" and when it was cooked, she gave of it with her own hands to Ramboasalama. Then Ramorabe's children were wroth and said: "He has Betsimisatra, and you are giving him these lands; what remains for us? Truly your name is Ra-mora-be" ("Mrs. Very easy"). And Ramorabe replied: "What is to be done, my children? it is his destiny, it is his fate." And after Ramboasalama had eaten, the queen bade him spend the night there and gave him a house. And after three days he announced his departure, and Ramorabe was exceedingly sad and blessed him again, saying: "Be strong and prevail, my lad, and may our ancestors bless thee, for thou shalt be the navel of Imerina!"

Then Ramorabe placed Ramboasalama in a *fiara* and said: "It is a royal palanquin which will serve thee to hold the kingdom, and all the people shall come to thee at Ambohimanga." And Ramboasalama returned home, and for the eightpence he had borrowed he repaid his friend a dollar as a token of his gratitude; and this friend was afterwards one of the 42 men who placed Ramboasalama on the throne.

Now let me resume and hasten on with the contemporaneous history of Antananarivo. To the king whom I mentioned above, as having died during the famine, succeeded Andrianavàlonibèmihisatra, his eldest son. As to how long he reigned, I can find no record. He distinguished himself by some slight conquests at Ambôhitraina and drove his enemies over to the Sakalava. He lies buried in one of the "Seven houses" at Antananarivo. His brother succeeded him and, although he was a leper, reigned seven years; and at his death the son of his sister, Andrianambôatsimarôfy, came to the throne, and he was the last. During his reign Ramboasalama had become king of Ambohimanga, and captured Antananarivo under circumstances which I shall presently relate at length. Thus ends the line of kings of Antananarivo as a separate kingdom.

I may be allowed to dismiss in a few words the fate of the Ambohidratrimo kings. More or less contemporaneous with the reigns of the last four kings of Antananarivo, five kings reigned there, the last being Rabêhety, who was conquered and deposed also by Andrianampoinimerina. In that way also ended the history of the Marovatana district as a separate kingdom.

I now come to the period of the final struggle for supremacy which eventually made Andrianampoinimerina king of Imerina. From a comparison of various events there is little doubt that, from the time the old lady Ramorabe blessed Ramboasalama as the future king, a movement was at work to place the most suitable man on the throne. A little knot of astrologers were their instruments to impose upon the people and tell them it was fate and destiny; but the real secret was that

a body of men, more sensible than the rest, had determined upon putting an end to civil war and virtual anarchy. It is here an interesting point, although a slight digression, to know how far back we have any authentic history of the Hova. Ramboasalama, in direct descent, was the grandson of Andriambelomasina, who was the grandson of Andriamasinavalona. Taking then the extremely low figure of 16 years of age when each king might become a father, we have a period of 80 years. This is how I have deduced my estimate that Andriamasinavalona's reign must have been at some period between 1730 and 1750; and the historical sketch, as thus far related, brings us to the beginning of the present century. Considering I have taken my starting-point about mid-way in what is supposed to have been the early history of the Hova, it would seem as if that history might be reliably constructed as far back at least as about the year 1690.

Ramboasalama was now a married man, strongly supported by a small party of faithful adherents; while the king of Ambohimanga was Andrianjafy, the eldest son of the ten children of king Andriambelomasina. Therefore Ramboasalama was the nephew of Andrianjafy, being the son of his sister. I can find no clue as to how long Andriambelomasina reigned, or how he died; but as his eldest son only succeeded him after that his grandson by a younger daughter was a man, it seems he must have had a somewhat long reign. Now Andrianjafy's father, King Andriambelomasina, had stated in his will—a verbal proclamation, of course—that Ramboasalama was to succeed his uncle; while the astrologer at Andrianjafy's birth had already predicted that he (Andrianjafy) would throw into disorder the inheritance of Andrianjakanavalomandimby (the name of a former king). So soon as his father was dead, Andrianjafy tried to overthrow the will and nominated his own son as the heir to his throne. He was a very cruel and unscrupulous man, and he had a brother who enjoyed the very short cognomen of Andriantsimivizafinitrimo, and whom he thought he could trust in his designs to make away with Ramboasalama. He said he did not see why he should "catch locusts for other people's children," and he consequently arranged a pleasure party with the intention of throwing Ramboasalama over a precipice. The brother, however, who was a friend of Ramboasalama, warned him of the danger, and told him to excuse himself at the last moment from joining the party, on the score of sickness. Baffled in his first attempt, Andrianjafy then pretended to be sick unto death himself, and sent for his dear nephew to come and see him. The brother, however, again warned Ramboasalama that it was merely a trap to kill him. The third attempt was to drown him in a marsh at the west of Ambôhipéno. The two brothers and their nephew proceeded together, when the brother again informed Ramboasalama of Andrianjafy's intentions; consequently our hero slipped behind and fled home. On Andrianjafy turning round and missing him—for travellers in Madagascar generally walk in single file—he asked where his nephew was. "Oh," said the other, "he is a little way behind; he has got a thorn in his foot."

At last Andrianjafy, finding all his secret schemes overthrown, sent a party to murder Ramboasalama openly, and entrusted this same brother again with the mission. At this time Andrianjafy was living at Ilâfy, and Ramboasalama at Ambohimanga. Andrianjafy had a silver coffin,

made for his nephew and provided the necessary number of silk *lamba* to wrap up the corpse in, ordering the murder for the Friday, the day being Wednesday. Andriantsimitovizafinitrimo again stood by his friend instead of carrying out the designs of his brother, and sent secretly the following message: "Flee this night, Andrianjafy's men are coming to slay you." So Ramboasalama made up a parcel of his effects the same evening, and early the next morning (Thursday) he and his wife and children fled by the north road out of Ambohimanga. When he reached the plain to the north, he passed a man named Ratèndrombòahangy, who was at work in the fields, and who was a diviner and astrologer. This man asked him: "Where goest thou?" So Ramboasalama replied: "I am off to Ikalóy, for Andrianjafy seeks to slay me, and I betake me where my life will be safe." (Ikaloy, I may mention here, was the abode of the family of Andrianampoinimerina, on his father's side. His father's name was Andriamiàramanjaka, but he plays no part at all in the history. The Malagasy proverb says that "Cows calve, not the bulls.") And the astrologer replied: "Go thou shalt not; come hither and offer up the sacrifice of a sheep with tapering horns, and work the *sikidy* without the division 'Ancestor.'"<sup>\*</sup> And Ramboasalama replied: "And suppose, my father, I am taken by my assassins?" And the astrologer answered: "Thy assassins will not overtake thee; offer thy sacrifice at Mángabè, for a king thou shalt be this very day." So Ramboasalama went and offered up a sheep and prayed to God, to the Creator, and to his ancestors at the place of sacrifice. In the meantime the astrologer left his work and hastened up to Ambohimanga.

- He immediately called together the twelve heads of the people and said to them: "This is what is the matter: Andrianjafy is trying to kill Ramboasalama, who accidentally met me in the fields; and I have sent him to offer up a sacrifice at Mangabe, which he is doing at this present moment; so then consider what is to be done, for they are trying to evade the will of Andriambelomasina."

And the "twelve men" with the "thirty men" said: "Let the heavens fall down, let the earth rise up and touch the sky, but cursed be he that changeth the words of Andriambelomasina." And these forty-two men immediately took the oath of allegiance to Ramboasalama, and the "twelve men" went off to fetch him. And when Ramboasalama saw them coming, he thought they were his assassins and was sore afraid. But "the twelve" came up and announced to him that they would protect him and make him king. "Only forty of you," exclaimed our hero, "and you will make me king! Why, all Avàradràno will be up in arms!" "Fear nothing," replied "the twelve," "we will protect you." Ramboasalama was unable to combat their determination and set out with them to return, sending a message to his wife and children to go back to Ambohimanga.

- That very day (Thursday) the people of Ambohimanga, i.e., the Tsimahafótsy tribe, were assembled by the forty-two adherents of Ramboasalama, and the question was put to them: "Who is to be king? for the will and testament of Andriambelomasina is about to be violated." And one Ravólana, a goldsmith, said: "The words of Andriambeloma-

<sup>\*</sup> The name (*Ràzana*) of one of the columns or rows of beans or seeds used in the divination; see ANNUAL X., p. 227.



sina were there, but Andrianjafy is still here!" In an instant thirty spears were plunged into his body. Another man, Rainimainty, asked: "And what do you intend to do with Andrianjafy?" The thirty men were immediately going to spear him also, when he begged pardon, crying out: "Whoever be king, I will serve him;" so his life was spared. Thus the Tsimahafotsy of Ambohimanga submitted to Ramboasalama that same day, and in the evening Ambóatany (a village on the ridge a mile and a half to the west) had also sent in its submission.

The next morning, Friday, as arranged by Andrianjafy, who was ignorant of what had taken place in the meantime, the band of assassins with the silver coffin, etc., came to carry out his orders, but found, to their great astonishment, the gates closed, and the town bristling with spears. And the guards said to them: "Where are you going?" And the others replied: "We have been sent by Andrianjafy to kill Ramboasalama." So the guards replied: "Get away with you, and don't talk nonsense, for two villages of the Tsimahafotsy have already acknowledged him as king!" And when Andrianjafy heard this message, he wept with rage and exclaimed: "Shall a child stand up against me?"

Such then is the somewhat dramatic story of how Ramboasalama, henceforth to be called Andrianampoinimerina, came to the throne. He is undoubtedly the most important king of Madagascar history, forming the link between the chaos of the last century and the order of the present one, as the ancestor of an undisputed line of monarchs who have reigned during this century. Three things conduced to place him on the throne: firstly, the will of his grandfather, the intended violation of which was rightly made the excuse for dethroning Andrianjafy; secondly, the purpose and determination of a small body of wiseacres called astrologers, diviners, etc., who, like the priests and clergy of all countries and ages, played a great part in the destinies of governments; and thirdly, the indisputable merits of the young Ramboasalama, as proved later on by his systematic conquest and organisation of the country, merits which no doubt had not failed to be noticed by the *patres conscripti* of Ambohimanga.

My readers would perhaps be disappointed if I did not briefly relate the end of the two uncles, Andrianjafy, and his brother Andriantsimitovizafinitrimo, the one who had acted so faithfully towards the nephew. Andrianjafy appears to have discovered that his brother had played him false, for shortly afterwards, when Andriantsimitovizafinitrimo was very ill, he asked to look at his hand in order to work the *sikidy* by examining the lines on the palm. When his brother held out his hand, Andrianjafy seized it and dragged him out of bed and killed him. (Sleeping in high bedsteads seems to have been an unhappy invention of those days.) Andrianjafy ordered him to be buried so deep that his body should never be found. But Andrianampoinimerina later on ordered the body to be disinterred and removed to Ambohimanga, and it is said that the men dug a whole day before reaching the body.

Andrianjafy's fate was a no less sad one, though certainly more deserved. Ilafy was tired of him: he never punished criminals or governed his subjects justly, and the heads of the inhabitants of Ilafy, the Tsimbambóholàhy tribe, entering into secret conference at night with Ambohimanga, surrendered to Andrianampoinimerina and then turned

Andrianjafy out of their town. He took refuge at Antananarivo, as yet ruled by Andriamboatsimarofy, who was his son-in-law. Shortly afterwards thirty Zanamànaréfo men came to fetch him, pretending to sympathise with him, and he replied: "I am still king!" His son-in-law warned him that it was a trap, but he refused to believe it and left in a palanquin. The thirty men took him by a circuitous route, and at length his suspicions were aroused, and he saw he was the victim of a ruse. He was then immediately bound with cords, and word was sent to Andrianampoinimerina that he was their prisoner. The king ordered him to be brought up and proceeded to the sacred stone to await him, but the heads of the people insisted upon his being at once taken to the east side of the city (outside the fosse) for execution. The king pleaded for him, saying: "He is single-handed now, what harm can he do more?" But the chiefs would not listen, arguing that he had destroyed their wives and children; so the king walked away down to the west side of the city, while the people executed Andrianjafy at the east side. They ordered two of his own nephews, one the son of his brother, and the other the son of his sister, to be the executioners. The place of execution outside Ambohimanga is to this day called Antsahafady ("Tabooed field"), and no monarch or anything belonging to the monarch may pass through it.

The first seven years of the reign of Andrianampoinimerina were one continued series of conquests and organisation. He began by rewarding the different persons who had placed him on the throne, and he then set out and conquered, village by village, the whole of Imerina. His capital was Ambohimanga, and although, as we have seen, it was a dependency of Antananarivo sixty to eighty years previously, yet as all the conquests of Imerina were made from it in this reign, it must rank as the first and original capital of Imerina. But I must now confine myself only to so many of the king's exploits as directly concern Antananarivo. Andrianampoinimerina, amongst the first acts of his reign, made a treaty of peace with Andriamboatsimarofy, king of Antananarivo. The treaty was made at Nanisána, and by it, as a guarantee of peace, it was agreed that the king of Antananarivo should give his daughter, Ravaonimerina, in marriage to Andrianampoinimerina, while the latter gave his sister to Andriamboatsimarofy. The words of the treaty were these: "If Ralèsoka does not become the wife of Andriamboatsimarofy, may Ambohimanga become the rice-field of Antananarivo; and if Ravaonimerina does not become the wife of Andrianampoinimerina, then may Antananarivo become the rice-field of Ambohimanga." The king of Antananarivo, however, did not keep his promise, for the beautiful Ravaonimerina—I take it for granted she was beautiful, in order, like Helen of Troy, to have caused a war—was carried off by Rabehety, the last of the kings of Ambohidratrimo already referred to above. Consequently war was declared between Ambohimanga and Antananarivo.

The first plan of attack to conquer Antananarivo was as follows: Andrianampoinimerina divided the attacking party into three: the Tsimahafotsy and the nobles went up by Ambàravàmbàto, at the south-east of Ambóhijànahàry (to the west); the Tsimiamboholahy by Anjòhy, from the Fàravóhitra (north) end of the town; and the Mandiavàto with the Tsiàrondàhy came up from Ambànidià (on the east).

They took the town, but found the inhabitants attacked with the small-pox. All such as were not ill were made captives, and the sick were driven out. At this juncture King Andriamboatsimarofy fled and took refuge at Fenoarivo.

It was then that the king appointed 1000 men to inhabit the town, from which originated the name Antananarivo. One third of these were Tsimahafotsy, one third Tsimiamboholahy, and one third Mandiavato. As another illustration of the origin of this system of naming towns, I might mention Anòsizato ("Island of a hundred"), which was taken at the same time and immediately garrisoned with a hundred men. (This is a village about two miles south-west of the capital.)

The small-pox became so severe that the garrison had to be withdrawn, but returned later on. Imerinatsimo (the name used in speaking of the inhabitants of the district of which Antananarivo was the capital) came back to rescue their capital, and as the men of the garrison were almost all sick, they had to flee, and Andrianampoinimerina, who was at then at Ambohimanga, lost the city for a time. He attacked and retook it, however, and replaced his garrison of 1000 men. But at the time of the *Fandroana* (the New Year's festival), while they were occupied in cutting up the beef, they were surprised and completely routed and driven out again by the Imerinatsimo, who came up in three bodies, one by Ambòhipòtsy (south), one by Anjomà (north-west) and Antsampanimahazo (also north-west), and the third by Ambanidia (east); and the city was again lost to Andrianampoinimerina. During the flight many captives were taken, and people lost their friends. Certain days of truce were set apart and notified by lighting bonfires, when both parties could meet at Môrarano (Alàrobà, west of Amboniloha), and look for missing relations and ransom them.

Nothing daunted, the king made a third attack on Antananarivo, adopting the same tactics as on the first occasion, and camping on three sides of the city at the places above-mentioned. There was a siege of three months before the city was taken. And when Andrianampoinimerina, who was looking on from Ambohimanga, learnt that the attacking party had captured the city, he sent the following message: "Take no captives, kill no one any more, for the kingdom is mine now; from chickens downwards you may take, and rice, but not the stores of rice in the granaries."

This was the last and conclusive conquest of Antananarivo. Then Andrianampoinimerina blew his conch shell and called the people south of Ambohimanga (the Avàradràno) together and invited them to go and live at Antananarivo. And all that went to live there were called *Voro-mahery* ("Hawks"). Antananarivo was in fact divided among the three great classes that had supported the king in his work of conquest, namely, the Tsimahafotsy, the Tsimiamboholahy, and the Mandiavato, but I fancy at the present day it would be of scant interest to enumerate the different parts of the city, and to which of these parties they belong.

It seems that the capture of Antananarivo was almost, if not quite, the first of Andrianampoinimerina's conquests. Radàma I. was then an infant, and some accounts attribute the quarrel between Ambohimanga and the two other large towns, Antananarivo and Ambohidratrimo, to an incident connected with the circumcision of Radàma. On account

of his joy at having a son, Andrianampoinimerina made it an occasion of being friendly with the kings of these two towns and sent a present of 1002 bullocks (why that peculiar number I do not know) to each of them. They replied they did not want his bullocks, which, they added, he had probably bewitched in order to conquer them and take their kingdom. Evidently they were jealous, and in order to form an alliance against him, the king of Antananarivo sent over to Rabehety, king of Ambohidratrimo, the young lady he had already betrothed to Andrianampoinimerina, and this was the *casus belli*. This does not appear to me at all an improbable version of the matter.

Having now come to the period when Andrianampoinimerina had become definite master of Antananarivo and Ambohimanga, I will take my readers round these towns as they existed one hundred years ago. The first question that will necessarily be asked is: What were the original names of Antananarivo? In the time of the Vazimba (the supposed aboriginal inhabitants) the town, or rather, mountain, was called Alamanga, which means the "Dark blue forest."\* King Andrianjaka, who reigned long previous to the starting-point of my present narrative, cut down the forest on the top of the hill and called it Analamasina, or "Sacred forest". This name apparently was only applied to that part of the present city occupied by the Royal Palace and as far as the Prime Minister's house, or thereabouts; and for some time the rest of the hill seems to have remained covered with dense forest, which explains the numerous surprises in the several captures and recapture of the place, until Andrianampoinimerina took it and applied the name of Antananarivo to the whole city more or less as we know it now.

Antananarivo had seven gates, and it may be interesting to trace their positions (see accompanying map):—

(1) *Imarivolânitra* ("Near the sky"), now occupied by the L. M. S. Printing Office, was the locality of one gate, at the bend of the street. Below that, now the Ambatovinaky street, there was forest and almost inaccessible rocks.

(2) *Ambônimitsimbina* ("Hill of solicitude"), to the south of the Palace mid-way towards Ambohipotsy, and giving its name to-day to one of the Roman Catholic churches, was the locality of a similar gate to that of Imarivolânitra. It was by this gate that Andrianampoinimerina's enemies came in and surprised the town while they were busy cutting up their Fandroana beef.

(3) *Ambàravàrambato* ("Stone doorway"), a gate at the south-west, is Ankadilânana.

(4) *Ankadibévava* ("Wide-mouthed fosse"), now called *Ambàvahàdim-tafo* ("Gate with a roof"), is the only gate now standing. It was Andrianampoinimerina who roofed it.

(5) *Ambàvahàdimasina* ("Sacred gate") was the most important gate of the city, being at the north-east corner. The north-east corner of every house is its most honoured place and is called the *zoro-firavazana*, or the corner for supplication. It is the part of the house which (in the divination) represents Alahamady, the first month of the year, and so in a town or

\* Or possibly, "Beautiful forest."—EDS. † The gates are shown by numbers, 1-7.

amp it is the most sacred position. Andrianampoinimerina always went in and came out through this gate in his trips to and from Ambohimanga, and it was necessary that the water used at the circumcision of the son of a king should pass through here. The gate was situated towards the end of the lane leading out of Andohalo to Bishop Kestellomish's residence, and the posts of the gate, if not now, were till very recently standing, or rather, making different angles with the horizon.

(6) *Anjohy* ("Cave") is simply the duplicate gate of Ambavahadimasina. On account of the importance of the locality there was one gate, Ambavahadimasina, outside the fosse, and another, Anjohy, inside. The Anjohy gate was just north of a large granite boulder which one passes on the right going down the lane toward the S.P.G. establishment. The little market in the lane is still called Anjohy.

(7) *Anjohy* is also the name of another gate which was situated at the mouth of the lane leading from Andohalo towards Faravohitra, between the schools of the R. C. Sisters of Mercy and the house of the mercantile firm of Messrs. Le Chartier and Co.

These were the seven gates, and those who know Antananarivo can easily form an opinion as to the size of the city proper. (See map.)

The *Rôva* or Royal enclosure was first made by King Andrianjaka. In the time of Andrianampoinimerina it was constructed of huge posts of hard wood firmly planted in the ground, touching each other and pointed at the top. All around outside was a thick hedge of prickly-pear. The first palace built was a wooden house erected by Andrianampoinimerina and called *Nanjakàna*. "I shall call it Nanjakàna," said the king, "because I have secured the kingdom (*fànjakàna*) here at Antananarivo." The second palace was named *Mànambintana* ("Having destiny"), "because," said the king, "it is as if I were predestined by God to have the kingdom." A description of the long succession of royal buildings since these first two hardly belongs to my present subject.

There were then twenty-seven districts within the precincts of the city, proper, which I will briefly describe (see map):—

*Analamasina*, the name given to the very top of the mountain, and the ancient name of Antananarivo already spoken of.

*Andohàlomàsina*, commonly called *Andohàlo*, the most important public place in the city, which has always been the scene of proclamations, assemblies, sports, and all other kinds of public gatherings. The sacred stone was laid by Andrianampoinimerina when he announced Radama I. as the future king; and every monarch on his or her accession must stand on this stone. There are other sacred stones in Antananarivo used by previous monarchs, the most important being *Ambàtomàsina*, to the west of Ambohitantely, which was used by the former kings from the time of Andrianjaka down to Andriamasinavalona. Andohalo originally was a steep gully and was levelled to its present condition by the early kings.\*

*Ambòdinandohàlo* ("Foot of Andohalo") is the spot where the third part of the ceremony of the oath of allegiance used to be carried out, viz., the spearing of the ox. When the city was besieged, the spring there was one of the chief sources of water supply for the people.

\* Is not the name Andohalo from *An-dôha-àloàlo*, thus meaning "At the head of the fosse"?—EDS.

*Ambohitantly* ("Village of honey"). The incident which earned this name has been described above (see page 476).

*Ambôhitsirôamanjaka* ("Village where two kings cannot reign"). There is more than one version of how this place earned its name. I choose the following as the most probable. When King Andrianjaka went to Alamanga (Antananarivo) and entered by the Alahamady gate (Ambôvahadimasina), he encamped here; and when the Vazimba saw the smoke from their fires, they all fled, and Andrianjaka mounted the city and said: "*Tsy ho roa aho, fa ho tokana*" ("I will not be two, but single"). Hence that village (now district) was called Ambohitsiroamanjaka.

*Ambôhimandro* ("Village of direction"), to the north of Andohalo, now occupied by the lately erected Anglican Cathedral of St. Lawrence. No monarch or anything belonging to the monarch may pass through here, because when King Andriamasinavalona conquered Razakatsitakrandriana (Lambotsitakatra), the latter fled the city by this way. For this reason it was impossible for Her Majesty the Queen to assist at the consecration of the Anglican Cathedral.

*Ambâtomiangara*, *Ambôhitsôa*, and *Ambâtobêhavanja* are three districts which have no historical traditions.

*Andohalokely*, lower down and to the south of Ambohitsoa, is under the same ban as Ambohimanoro, and for the same reason. It is here that the valuation of the property of criminals takes place.

*Antsahatsirôa* is the old proclamation ground of Andrianampoinimerina and is used even to this day for some government business. One might guess a very long time for the origin of the word; it is this: *An-tsaha tsy-rôa-mâsina*, lit., "At the field not two sacred," that is, it is the only sacred field. In other words, there is a spring of brackish water there and it is from that spring, and that spring only, that all the Hova of Antananarivo get the sacred water for the circumcision.

*Andrânômalahelo* ("Sad waters") is at the bottom of Antsahatsirôa. This is also where the oaths of allegiance were taken, that is, the ceremonies of striking the water and spearing the *ômbry kambôty mlahelo* ("sad orphaned ox") were performed here; hence its name.

*Ambôhijdfy* and *Ampamaho* have no historical associations of interest to foreigners.

*Ambâtondrafandrana* is now occupied by the chief Court of Justice, a temple in the Ionic style, in which, in accordance with Radama's order, that all trials should be open to public view, three of the sides are open except for the stone columns. The name means "At the stone of Rafandrana." There were three ancient kings of the name of Rafandrana, and the stone they erected is still there, but they are buried elsewhere. They seem to be the most ancient kings of Antananarivo that can be traced, and when the monarch recounts the history of the kingdom in an exordium at a *kabary*, etc., the name of Rafandrana is the first mentioned.

*Avâradrôva*, *Atsimondrôva*, *Atsinânandrôva*, and *Andrêfandrôva* mean respectively North, South, East, and West of the *Rova* or Royal enclosure. All these of course were coveted places in the early days, and the king gave out the lands to his immediate friends, relations, and most faithful adherents as dwelling lots.

*Ankadinandriana* and *Angavokely* may be dismissed without notice.

*Antéza*, at the south of the Palace, is now called *Miàdamafàna*, and the large house on the site is now the Foreign Office.

*Ankaditápaka* in the days of Andrianampoinimerina was a fosse diving Ambohimitsimbina from Angavokely.

*Ampàmarinana* ("Place of hurling") occupies the edge of the western precipice of the town, and it is from here that criminals were hurled down. Many of the native Christians were also thrown down from here during the times of persecution (in 1849), and the place is now occupied by a Memorial Church of the L.M.S. bearing this name.

*Ambòhinònoka* (*Nònoka*, a species of *Ficus*) is the market-place to the west of the Palace, and was established by Andrianampoinimerina.

*Amparihindrasahàla* ("Lake of Rasahàla"). Rasahàla was one of Andrianampoinimerina's twenty-seven wives, and she had this lake constructed for the purpose of rearing the king's ducks. This lake, the spring at Ambodinandohalo, and the brackish spring at the bottom of Antsahatsiroa, were the only three sources of water in the town during the civil wars and sieges of Antananarivo.

*Amparihimaimbo* ("Stinking lake"). This is a small lake south of the Palace and west of Ankadinandriana. Its waters are unfit for drinking.

This completes all that we know of interest respecting the ancient city proper of Antananarivo. But there is one more curious historical association connected with the very old *Aviàvy* or fig-trees (a species of *Ficus* peculiar to Madagascar) which are still to be found in Antananarivo, and which I cannot pass over. A very venerable one still stands in the churchyard of the new Anglican Cathedral and appears to have been respected by architect and builders. These fig-trees were planted by order of Andrianampoinimerina under the following circumstances. At a later period in his reign than I have as yet touched upon, and after Antananarivo was conquered, for Radama I. was now a youth, the people of Marovatana attempted to attack Ambohimanga, where the king then resided. It was in the night, and suddenly the crows of Ambohimanga set up such a great cawing and so alarmed the king that he sent for the diviners to explain the cause. The diviners told him it was an evil omen and that he should prepare for an enemy; and while they were talking, a messenger came in to say that the Marovatana people had arrived at Ambòhibolòlona. The king called up his faithful Tsimahafotsy and sent his son Radama to accompany them, promising them anything they might ask for, if they could only drive off the enemy. They succeeded, history tells us, and even the crows swooped down on the enemy and aided in the fight. And two of the crows, after the enemy had been routed, flew back to Ambohimanga and perched at the king's door. So Andrianampoinimerina again consulted the diviners, who told him to "rest assured, as he would shortly have good news." No sooner had this been said, than another messenger came to announce the defeat of the enemy; and the next day the young Radama entered the town triumphant. And Andrianampoinimerina issued a proclamation about the crows: "Look at this, O ye people, how even the birds of the air love me and acknowledge me as king! The enemy is at hand, and they rouse my people! I am asleep, and they come and wake me! See how they love me! And this is what I

say to you, the crows of Ambohimanga are birds that wait upon me, and if any one stones them or kills them, I shall count it a crime." Notwithstanding this, the first trial of a culprit seems to have been a fiasco in open court. One day a man was caught with a nest of young crows and was brought before the king, who said: "Does not my law say that if any one steals, his wife and children shall become slaves, and have I not added to that law that killing or taking crows is included? How is it then you steal the crows of Ambohimanga?" "Sire," replied the accused, "I am well acquainted with your law, which says, when a man steals, we will sell his wife and children into bondage, so, may it please your Majesty, I have followed exactly the text of your law, for the old crow has been stealing my earth-nuts and my maize, and in consequence I have condemned her to lose her children." Then the king burst out laughing, dismissed the case and cautioned the accused not to repeat the offence. The crows of Ambohimanga after this had food cooked for them every day, and even to the time of Ranaválona I. rice with meat cut up small was exposed in wooden winnowing pans at Antananarivo, and between 400 and 500 crows came over from the forest of Ambohimanga every day to eat and went back in the evening. And the fig-trees were planted by Radama in Antananarivo for them to roost in and build their nests, and it was forbidden to destroy these trees under any circumstances, although every other tree might be cut down in a case of emergency, such as when the embankments of the river gave way, and branches were wanted to repair them. This explains the existence of the old fig-trees in Antananarivo. The reader will not have failed to detect some discrepancy as regards the former existence of so much forest, and then suddenly the necessity of planting trees. I have laboured hard to reconcile these, but can find no trace of how or when the forest disappeared, but it must, I think, have been destroyed during the reign of Andrianampoinimerina.

What has been described as the city proper is a very small part of the present Antananarivo, but in the days of which I am speaking there were very few places outside the fosse that were inhabited. There was Ankádimbahóaka and Fiadánana, inhabited by the Tsimahafotsy; Mánanjára, Táosy and Tsimánalády (in reality one village), inhabited by the Mandiavato; and Ambòhitsoròhitra and Mérintsiaffndra, by the Tsimiamboholahy. These places were really nothing but outposts to protect the city, and they were only inhabited by the king's reliable adherents. The west side of Faravohitra was inhabited, and on the east of the city, Fálariho and Ambátoròka, all for purposes of precaution and to guard against surprise. Andrianampoinimerina founded Ampàribè, and it was here he issued his proclamation after he took the city from Andrianamboatsimarofy. Here also were the rice-stores of the *isam-pangàdy*, or spade-tax; but all these places were then looked upon as being in the country. To go to Ambàtonákanga was termed *midina any an-isàha* (to go down into the country), and it was the frequent occurrence of fires on the top of the city that first caused the people to go and settle in what was then the country, and is now the principal street of Antananarivo and the seat of most of the foreign trading houses and other places of business. There are forty-four different districts belonging to Antananarivo outside the old city proper. As there are no



names of streets, the names of these localities are the only present guide to persons' addresses. They compare in miniature to the names in London, such as Hackney, Highbury, Brixton, etc., having once been separate villages and now become one compact town. Hence the error into which writers have for years fallen of explaining the meaning of Antananarivo as the "City of a thousand towns." I shall not enumerate the whole forty-four districts, but only mention such of them as by their etymology or some known historical incident are likely to be of interest to English readers.

*Ankoràhotra.* As the chief entrance to Antananarivo was by Ambavahadimasina, and this district is immediately to the north of it, it was the scene in former times of many stirring incidents. The gunpowder used to be stored here formerly, but the name of Ankorahotra is now chiefly familiar in connection with the Society for the Propagation of the Gospel, whose establishments are in that quarter. Here also is the stone of Rakòtonavàlona, one of the three generals who took the city, and who received a bullet in the thigh during the attack. Down below, and north of Ambàtonandriankòtonavàlona, is one of the best and sweetest water sources in Antananarivo.

*Anàlakély* ("Little wood," to the north-west), the site of Government workshops and, for 27 years, of the L.M.S. Hospital, does not seem to have come into note until the time of Queen Ranavalona I., when it was chosen as the place for manufacturing gunpowder and boiling soap, so soon as Imerina had been taught these manufactures (the latter one by the late Mr. James Cameron).

*Ambòhijatovo*, which has given its name to the large Friends' Foreign Mission School, and which is south of Faravohitra, means "Village of the youth," but I fail to trace the origin of it. It was here that Andriamasinavalona conquered Lambotsitakatra. The latter tried to get in at the gate of Anjohy, but found it shut. He then went down to Soràka, but the people there would have nothing to do with him, and he was virtually dethroned. There is a short cut leaving the Faravohitra road near Ambohijatovo, crossing the head of the valley and coming out at Imarivolanitra; this is called Andémbalémbe. This apparently was the path followed by Lambotsitakatra, for nothing belonging to the monarch may pass through Ambohijatovo or Andémbalemba.

*Ambatonakanga* ("Stone of the guinea-fowls"). In the time of Andrianampoinimerina this quarter consisted of plantations of maize, sweet-potatoes, and manioc. There were no houses there till the time of Radama I. A Memorial Church of the L.M.S. now bears the name of this district.

*Antsàmpanimahàzo* is really *An-tsàmpana-ny-mahàzo*, or, as we should say in English, "Cross-corners," or "Cross-roads." The roads seem to have existed then as now: one leading to Anjomà, another mounting the town to Ambàtovinàky, although not then made broad as it is now, while the cross road led to Andravòahàngy, north, and Imàhamàsina, south, as at present.

*Ambàtovinàky* ("Broken rocks") is so called on account of the work of blasting and breaking up the rocks to make the road, although this was not done till the time of Radama I., and then by convict labour.

*Amràribè* ("Much sugar-cane") is the quarter immediately adjoining

Imahamasina on the north, and containing to-day some good residences and gardens. It was the rice granary of Andrianampoinimerina, and the servants of the king lived there to receive and store all the rice that came in as taxes.

*Ambohitsorohitra* ("Village of larks"), I mean the ornithological larks, and not the larks that Radama II. used to carry on there and which cost him his crown and his life. This place is historical as being the ancient property given to the first French Consul, M. Laborde, and which the Government declined to hand over to his heirs. By the late treaty it is now the property of the Malagasy Government once more, and has recently been lent to M. Rigaud, a Frenchman engaged in mining and engineering works for the Government.

*Anjomà* ("Friday") is the great market-place, the market being held on the day indicated by its name. The original locality of this market was Ankadimbahoaka, and it was Radama I. who removed it when he wanted to build the palace at Isoanierana. Twenty or thirty thousand people assemble here every Friday.

*Soràka* is now more or less identified with the Norwegian settlement in Antananarivo, some of their establishments being there. The derivation seems to present some little difficulty. When Lambotsitakatra ran away (as above described) and came here for aid and sympathy, we are told that "*nisokàka tao ny vahàka*" ("the people drew back" ?), saying they would not follow a coward. From this word *nisokaka* is presumed to have been formed the word *Soràka*. The connection does not appear altogether satisfactory, although instances are not wanting where, for the sake of a nickname, a change from *k* to *r* would be made. Perhaps some readers of the ANNUAL will be able to solve this question.

*Imàhamàsina* ("Making sacred"), and *Anòsy* ("Island"). In the time of Andrianampoinimerina Imahamasina was a rice-field, and the small piece still left in that state on the north side is a sample of what it was all like in those days. It was Queen Ranaivalona I. who had it converted into a drilling ground for soldiers and erected a sacred stone on it. Anosy, the lake and island adjoining it, was also the work of that queen. The original object of forming the lake was to have a supply of water for the manufacture of gunpowder.

*Ambèrontsànjy* (*Verontsanjy*, a kind of grass), at the east of Imahamasina, is where the sacred bulls of Andrianampoinimerina were kept. It is only of late years that it has been built upon.

*Ambàtombòrodàmba*, south of the above place, like Andravoahangy and Ankarahotra, is supposed to contain the tombs of Vazimba. The word means "At the stone of cotton rags," because the people hang pieces of rag there if the Vazimba favour them. "If you bring us good fortune," they say at the stone, "I will anoint you with oil and bring you a piece of rag."

*Amparihy* is the name of the lake at the east of Ambòhijànahàry. It was not made until the time of Radama I., who had it dug out for the soldiers to bathe in.

*Ankàdimbahàka* was the former Friday market-place. It was somewhat high ground, and Radama had it levelled down for a drilling ground and for building Isoanierana palace on. The origin of the name Isoanierana ("*Benefit asked for*") is this: Radama asked permission of the people to

change the market-place, because he wanted to build a house there, and in consequence he called the place *Isoa-nierana*.

*Ambôhipôtsy*, the extreme southern end of the mountain on which the capital is built, is conspicuous by a very pretty L. M. S. Memorial Church with tower and spire. This spot was not inhabited at all in the time of Andrianampoinimerina, and it was the place where criminals were speared and beheaded. The place was so strewn with the whitened bones of the dead that it received the name of *Am-bôhi-pôtsy*\* ("At the white village"). Here the proto-martyr of Madagascar was killed in 1837.

*Ambohijanahary* ("Creator's hill"), the round mountain to the west of the city, with its huge radiating trenches, must present to the uninitiated as great a problem as the enormous canals on the planet Mars offer to our astronomers. The secret, however, is not far to find. Radama I. intended to level the whole even with Imahamasina, and the trenches show how far the work proceeded. An enormous number of men must have been employed to remove what has been taken away, but in comparison to the whole mountain these trenches may be compared to so many pin-scratches on a nutshell. The work was stopped because they came to the bed-rock of gneiss. This mountain, on account of its height and proximity to Antananarivo, has always been an eyesore. It has more than once been used by the enemy for firing into the city. The Malagasy are not allowed to build up its sides any higher than the position of the present houses; and when the French Resident applied to lease it for the residency some four or five years ago, the Government declined to listen to the request.

*Ambanidia* is the best known quarter on the east side of the city. The market there was founded by Andrianampoinimerina. North of *Ambanidia* there is a haunted spring or well, and people who draw water there, so they say, often fall sick; and unless the person takes to the well some whitening, honey, and cooked rice, he will never get well again.

I should like to continue the history of many other districts, but I fear I shall overstep the limits of this paper. Enough I trust has been related to show that much interesting ancient history can be gathered from names. I now propose to take my readers back to *Ambohimanga*.

As soon as Andrianampoinimerina had got through the main part of his conquests, one of his first undertakings was to dig a fosse round *Ambohimanga*. For this purpose he assembled all the people and apportioned to each his share, and every evening he killed a great number of bullocks. In fact, the generosity of this king, whenever he had any public works to carry out, was proverbial, and to this trait I attribute a great deal of his success. He never seems to have been mean, and he always kept his word. The fosse having been completed, the king set up seven gates to *Ambohimanga*, as in Antananarivo, the two principal ones being one on the north-east and one on the west, through which no dead body may pass or anything coming from the dead. The gates on the north and north-western sides were those by which the dead might be taken out, and the three remaining gates on the south and eastern sides were for purposes of defence. The next step

\* Much more probably from the very white colour of the soil, which is formed of decayed gneiss. — EDS.

- was to promulgate very strict laws about the forest. Ambohimanga is thickly wooded, but the inhabitants were forbidden, and I presume are so still, to touch the forest even to take firewood, and the penalty is a fine of one dollar and a bullock. There is only one case in which it is allowed to take wood, and then notice must be given to the authorities, and that is when a woman gives birth to a child. It is the custom in Madagascar for the mother to be placed by the side of a very large fire, hence this exception in favour of women in child-birth.

- It is hardly necessary to give the names of the seven gates, but merely to state that their positions were all determined by the astrologers, following the positions of the Arabic months, exactly as observed in their houses. Thus, Andrianampoinimerina being born during the first phase of Alahamady, the position of which is the north-east corner of the house, the gate *Ambâtomitsângana*, with its duplicate *Ambâvahâditsiombiombi*, was fixed in the position of Alahamady, and the king entered and left the town by that gate only.

The summit of the town has five more gates, only one of which I need speak of, and that is *Ambâvahâdimâsina* ("Sacred gate"). It was set up by Andrianampoinimerina, and the posts were of *Zahana* wood, a wood that seems in many ways to play an important part in the circumcision ceremonies. Whenever a Tsimahafotsy performed these ceremonies, he had to take a splinter from these posts with which to light the torch burnt on the occasion, hence the name "Sacred gate." That is also why the king forbade the *Zahana* to be planted in Ambohimanga, because the gate-posts were sacred and were of that wood.

- Ambohimanga consists of three parts: the *lâmpony* or summit, or city proper, containing sixteen districts or places of note; the wooded part of the town included within the fosse, containing twenty-three districts; and outside the fosse, consisting of thirty-eight places or districts. Considering that no foreigner is allowed to enter Ambohimanga, it will be only necessary to refer to such places and circumstances as will give the reader some general insight into this mysterious and interesting town.

*Ambâtomiantêdro* ("Stone which points upwards"). This is apparently the highest point in Ambohimanga, at the south-east, and is the look-out. Andrianampoinimerina, who seemed to be fond of playing upon words, called it *Ambâtomihaontêdro*, because he said it was to be the rendezvous (*mihaona*) of the twelve mountains or towns of Imerina.

- *Fidasiana* at Ambohimanga corresponds closely with Andohalo at Antananarivo. It is in the middle of the town and is used on all public occasions: for proclamations, markets, dancing, and amusements, and for taking the oaths of allegiance. It has a sacred stone on which the monarch must stand, and everything is performed there as in Andohalo.

- *Antsâkantavilona*, to the north of Fidasiana, is named after a shrub (*Vernonia pectoralis*, Baker) of that name, the leaves of which are used as a remedy for a children's complaint. It was here that the ceremony of the elevation of the idol Rafiringa took place, as soon as the rainy season was nearly over. Rafiringa was a favourite little idol of Andrianampoinimerina, and when it was sprinkled with ashes, the weather turned misty, so they said, and the rains for the year ceased.

*Andrânombôahangy*, to the west of the town and near the woods, is a

lake originally made by Andrianampoinimerina to furnish a supply of water for the town. The words of the proclamation were these: "I call this lake *Andranomboahangy* ("At the waters of the coral bead), because this Ambohimanga is a coral bead. I have made it in order that women with child, who are unable to descend to the foot of the city, and the sick and young children, may have a ready supply of water."

*Ampiloràhanakôho*, in the middle of the town, is used to this day as a public play-ground. The name means "At the place of shying at fowls." The fowl is buried in the ground, all except the head, and you pay a penny to have fifteen shies, and I presume you earn the fowl if you knock its head off. In this nineteenth century the Malagasy might do worse than substitute for this sport the sticks and cocoa-nuts of our fairs and race meetings, and change the name to *Ampiloràhambôanio*.

The above is sufficient to give us a glimpse of the politics, religion, life, and sport of ancient Ambohimanga. Let us now examine some more of the names of the twenty-three other places within the fosse. As no foreigners ever see the town (except in a bird's-eye view from Mangabè, to the west), the places can have no topographical interest; I will only then select such names as by their etymology suggest or recall some historical, political, social, or religious customs of the early inhabitants.

*Amparihy* ("The lake") is worthy of notice. It is at the north of the town, and Andrianampoinimerina, as was his wont, gave a great number of oxen to pay for its construction; it was made for the purpose of supplying water for the king to bathe in. If anything tabooed fell into the lake, the dam was opened, and it was drained dry and then refilled with water taken from Amparihimàsina, west of Alasôra, from Antsahatsiroa in Antananarivo, from Ambatomasina, and from Anôsibé. A pair of coral beads and a silver ring were then thrown into it, and the water was thus consecrated. Twice during the present century this lake has been emptied; once, in the time of Ranavalona I., an ox that had been selected in order to be killed for a funeral jumped into the lake and consequently desecrated it; the second occasion was during the reign of Ranavalona II., when a dead dog was one day found in the lake, necessitating its being drained and refilled. Since the time of Rasohérina (1863—1868) the lake has been guarded, and people may not take the water or wash their feet in it.

*Ambàtontsàkalàva* ("Stone of the Sakalàva"). This name hands down to posterity the fact that in former times the Sakalava came into Imerina and attacked Ambohimanga. These people came from the north-west coast; they tried to attack the town by the south, when Andrianampoinimerina in person slipped down through the woods at the west, and from the stone which bears this name fired and drove the Sakalava away. We are further told that in making their escape the enemy were stung by the *Amiana* (*Urera radula*, Baker) and the *Sàmpivàto* (*Urera acuminata*, Baker), and their hands and bodies being all swollen, they exclaimed: "This ground is sacred, even the trees bite!"

*Ambàtolokàna* ("Stone of oaths") is at the south of Ambatomiantendro. This is a stone to which people went to take solemn oaths. The stone was anointed with grease, the person killed a fowl, and the blood and the feathers, the feet and the head were placed round the stone, the person pronouncing these words: "If you bring me prosperity,

I will kill a fowl, I will kill a sheep and offer it to you, and I will anoint you with oil." And if the person obtained what he wished for, he offered up a sheep and poured its blood over the stone.

*Andrakânjo*, the name of a place to the north of the town, has more or less a ludicrous history. Andrianampoinimerina was out for a walk one day with his courtiers, when they came across a woman feeding a tabby cat. "Let me kill that cat," said a courtier. "What for?" enquired the king. "Because it is uncanny" (a tabby cat is thus considered in Madagascar). And after the king had gone home, the courtier killed the cat. And when the owner came back and found her cat dead, she went and took her best silk *akânjo* or bodice to wrap it in. So the courtier went and related this to the king, who exclaimed: "That's *Rakanjo*! What, wrap up a tabby cat in a silk garment?" And that part of the town has ever since been called Andrankanjo.

*Ankôrorôsy*, in the woods, is another illustration of a place named after a very trivial incident. During the digging of the fosse the heap of earth thrown up from the ditch was, after the manner of children of all countries and ages, used by the youngsters of Ambohimanga for sliding down; hence the name Ankororôsy, which might be translated, "At the toboggan."

King Andrianampoinimerina had his particular ground where his washing was hung out to dry, and even his shirts as they flapped in the wind exclaimed: "*Odi profanum vulgus et arces*," for it was not permitted to approach the king's drying-ground; the native name for this place, which is in itself long enough for a clothes' line, and is written *Ampanahazandâmbanandriana*, is that of another of the districts of Ambohimanga.

*Ambohimsina* ("Sacred village") was the most important of the districts outside the city proper. Andrianampoinimerina arranged it for keeping the sacred bulls, the *ômbi volavita*, or red and white oxen having round patches on the body, and the bull and cow that tear up the earth with their horns, all of which kinds of cattle played a great part in the offering of tribute, also at the Fandroana ceremonies, the elevation of the idols, and on sundry other occasions. These sacred bulls had silver rings in their ears, and the *Tsiârondâhy* who tended them was a man of no small importance. No one coming from a funeral could go to Ambohimasina or approach the bulls, and no inhabitant was allowed to die in Ambohimasina, if it could be prevented. So soon as a person was supposed to be near death, he was immediately removed from that quarter.

Ambohimanga inside the fosse is apparently not well supplied with water, having only one spring called *Antsahanandriana*; hence the necessity for making ponds. Outside the moat there are nine springs of water, the most important one in the days of Andrianampoinimerina, called *Ankâsina*, being now completely dried up. *Mandrênirôhana* ("Feeling rheumatism") is another spring which is supposed to depend for its supply of water upon the caprice of the Vazimba said to be buried there. If the Vazimba is in a bad temper—probably at the time his quarterly bills begin to come in—he vents his choler on Ambohimanga by stopping up the spring.

Of the thirty-eight districts outside the moat of Ambohimanga there is no need to speak, unless I mention one of them, *Antsamànitra*

("Fragrant field"), where there is a church of the London Missionary Society, in addition to others near the western and eastern gates. Near the latter an English missionary resides to attend to the spiritual wants of the town, in which, up to the present, no white man, except the late Rev. W. Ellis, has ever set foot.

The first palace Andrianampoinimerina built for himself in Ambohimanga was *Mahàndrihòno* (*Mahàndry-hòno*="Able to appease, say they"), so called because Andrianampoinimerina had quelled discontent and united the kingdom. On the ends of the cross-pieces of the gables were four silver birds, and much silver was expended on the corners and other parts. The king then constructed *Manjakamiàdana* ("Reigning peaceably"). This was a small palace until enlarged by Ranavalona I., and it was here that the king placed the idol *Manjakatsirôa*, when at Ambohimanga, while he lived in the before-mentioned house. *Trànofiàratra* is a glass house built by Ranavalona II.

In another enclosure *Nanjakàna* and *Mànambintana* are two houses bearing the same names as those at Antananarivo. The former of these was built before Andrianampoinimerina's time, and he improved it. *Manambintana*, as well as another in Nanjakana called *Mànandrainanjaka*, were the work of Andrianampoinimerina, the latter being built for his children. *Fôhilôha* and *Kêlisôa*, in the same enclosure, were houses that had been transported from Antananarivo. The whole of these five buildings in Nanjakana were burnt down on the day of the funeral of Ranavalona I., but were all rebuilt by Queen Rasoharina.

At Bevato there are four royal houses in a third enclosure. Of these, *Mànatsàralèhibé* is considered the chief of all the royal houses built by Andrianampoinimerina. The walls were of *Ambôra* wood (*Tambourissa* sp.), and the posts of *Mérana* wood (*Vernonia merana*, Baker). When Ranavalona I., later on, wished to renew it, she simply rebuilt over it with wood from Antsihanaka, not daring to remove it. It was first built at Antananarivo and from thence taken to Ambohimanga. *Mànatsàrakèly* was built for the twelve wives, and *Tsàraray* for the children of the king. *Bevato* ("Many stones"), the house of that name, was so called because not only there is a great rock there, but it was at that place that all the women and children collected stones with the intention of stoning Andrianjafy, if he should attempt to return to Ambohimanga (see page 482).

Thus we have three distinct enclosures: *Mahandrihono*, the residence of Andrianampoinimerina, and where are to be found the twelve "Sacred houses," or tombs of the royal families; *Nanjakana*, afterwards given by Radama I. to the children of the king; and *Bevato*, for the twelve wives of Andrianampoinimerina.

The idol *Fantàka* in those days had a compound and a wooden house similar to that of royalty itself. The house was a very lofty building to the west of Bevato. The idol *Kêlimalàza*, which was the king (or queen, I cannot tell its sex, for *Kelimalaza* was said to be only some kind of insect) of all the idols, was also honoured in the same way.

The last place of note was the *Kiànja*, or sacred court, to the west of the tombs. There is the sacred stone on which were slain the oxen for the Fandroana, and for the circumcision of a king's son, and from which prayers and thanksgivings were offered to the ancestors.

Such then is a fragment of the history and topography of ancient Antananarivo and its sister capital Ambohimanga, with just so much of the history of Andrianampoinimerina as may serve to connect events and fix more or less exactly the dates of the times I have been speaking of. Very little attention has hitherto been given by English writers to investigate any of the Hova history prior to the time of Radama I., when Europeans first went up into Imerina, although it seems to me there remains much history of the last century that could be recovered and pieced together about this interesting people. To maintain that all stated above is authentic would be presumptuous; but if it be fiction, I should certainly be prouder of my merits as a novelist than of any efforts I have made to link together what I believe to be reliable historical facts. And I must mention in conclusion that as this paper was suggested to me by, so I am indebted for much information in it to, the remarkable collection of Malagasy documents made by the Rev. Father Collet, S.J. This work, which consists of three volumes octavo, of some 800 pages each, I have recently translated into French, and it is to be hoped they will some day be public property. At present, the volumes, which are written in archaic Malagasy, are not allowed by the Malagasy Government to be issued to the general public, for reasons best known to themselves, although of course the Government is entirely indifferent as to foreigners reading them. From disconnected parts and anecdotes contained in these works, coupled with a personal acquaintance with the language of the people and the places I have treated of, I have attempted to fit in a gap of a few years of ancient Hova history, confident in the belief that with more research in the same direction a tolerably interesting and reliable history of Imerina during the last century might be written.\*

A. TACCHI.

\* It may give a clearer idea of the chronology of the foregoing history if the succession of Malagasy sovereigns during this century is given; it is as follows:—

K. Andrianampoinimerina...	...	?	—1819	Q. Rasoharina	...	...	...	1863—1868
K. Radama I.	...	...	1819—1828	Q. Ranavalona II.	...	...	...	1868—1883
Q. Ranavalona I.	...	...	1828—1861	Q. Ranavalona III.	...	...	...	1883—
K. Radama II.	...	...	1861—1863					(EDS.





EARLY NOTICES OF MADAGASCAR FROM THE  
OLD VOYAGERS, PART III.:

HAMILTON'S DESCRIPTION OF MADAGASCAR, 1744.

READERS of the ANNUAL may be interested in the following extracts from "A NEW ACCOUNT OF THE EAST INDIES, GIVING An exact and copious Description of the Situation. Product, Manufactures, Laws, Customs, Religion, Trade, etc., of all the Countries and Islands which lie between the CAPE of GOOD HOPE, and the Island of Japon.

"Interspersed with An entertaining Relation not only of the principal Events, which happened during the Author's Thirty Years' Residence in those Parts; but also of the most remarkable Occurrences and Revolutions in those vast Dominions, for this Century past. Comprehending also many curious and interesting Particulars relating to our Commerce with those Countries, and the Affairs of the EAST INDIA Company.

"Illustrated with MAPS and SCULPTURES. By Captain ALEXANDER HAMILTON. In Two VOLUMES. Vol. I. LONDON:

"Printed for C. HITCH, in *Paternoster Row*; and A. MILLAR, opposite to *Katharine-Street* in the *Strand*. M.DCC.XLIV."

The first chapter ends with this paragraph, at p. 15:—"And now having travelled along the Shore of the Continent, from the Cape of *Good Hope* to Cape *Guardfoy*, I'll survey the Islands that lie in the *Ethiopian* Sea; but as they afford nothing for Commerce but Slaves and Provisions, they are little minded by Merchants: So beginning with the Westmost, I'll bring them in order to the Eastward."

"CHAP. II. Giving a short Description of the Islands in the *Ethiopian* Seas, with some remarkable Passages historical and accidental.

"MADAGASCAR, or as the *Portuguese* christened it, *St. Laurence*, is one of the largest Islands in the known World, and affords most Part of the Requisites of human Life: It produces very large Cattle, whose Flesh is excellent, especially their large Humps that grow between their Neck and Shoulders. They have also Goats and Deer plenty enough, and when the *Portuguese* first sailed along the Coasts of this Island, they left a Brood of Hogs, that has mightily increased. They also christened many Rivers and Cape lands that are not now frequented, but only known by their Names and serve for Nests to Pirates. The *French* made a Settlement on the East Side of it, and called it Port Dauphin; but finding that the Commerce there would not bear the Expence of the Colony, they left it again.

"The *English* formerly drove a Trade for Slaves on the West Side of the Island, particularly at *St. Augustine's Bay*, and at new and old *Messalige*, but now they are afraid of the Pirates, tho' some venture their Necks in going to trade with them. There have been several Squadrons of *British* Men-of-War sent to cruize on the Pirates, but have had very ill Success in finding them out; but one *Scots* Ship, commanded by one *Millar*, did the Publick more Service in destroying them, than all the chargeable Squadrons that have been sent in quest of them; for,

with a Cargo of strong Ale and Brandy, which he carried to sell them, in anno 1704, he killed above 500 of them by carousing, tho' they took his Ship and Cargo as a Present from him, and his Men entered, most of them, into the Society of the Pirates.

"It was reported in *India*, that Commodore *Littleton* had some of that Gang on board the *Anglesey* at *Madagascar*, but, for some valuable Reasons, he let them go again; and because they found Difficulty in cleaning the Bottoms of their large Ships, he generously assisted them with large Blocks and Tackle-falls for careening them. Whether those Reports were true or false, I will not undertake to determine, but I saw a Pirate at Bengal, in the French Company's Service, that affirmed it.

"*Madagascar* is environ'd with Islands and dangerous Shoals, both of Rocks and Sand. *St. Mary's*, on the East Side, is the Place where the Pirates first chose for their *Asylum*, having a good Harbour to secure them from the Weather, tho' in going in there are some Difficulties, but hearing that Squadrons of *English* Ships were come in quest of them, they removed to the main Island for more Security, and there they have made themselves free Denizens by Marriage: And I am of Opinion that it will be no easy Matter to dispossess them. In anno 1722, Mr. *Matthews* went in quest of them, but found they had deserted the Island of *St. Mary's*, leaving behind them some marks of their Robberies, for in some places they found Pepper a Foot thick, lying on the Ground in the open Air. The Commodore aforesaid went with his Squadron over to the main Island, but the Pirates had carried their Ships into Rivers or Creeks, out of danger of the Men-of-War, and to offer to burn them with their Boats, would have been impracticable, since they could have easily distressed the Boats' Crews out of the Woods. The Commodore had some Discourse with some of them; but they stood on their Guard, ready to defend themselves, if any Violence had been offered them.

"I have heard it reported by some who had frequented *Madagascar* for trade, that the Natives that live far from the Sea are very black, and their Hair like Lamb-wool. What Religion they profess I know not, and the Pirates are but scurvy School-masters to teach them Morals.

"There are many Islands and Shoals lying to the eastward of *Madagascar*. *St. Apolloni* is uninhabited; *Domascarenhas* is inhabited by the *French*, but formerly by the *English*, and was called by them, the *English Forest*. *Maritius* was formerly inhabited by the *Dutch*, but in anno 1703, they had orders to leave it, and repair to *Batavia*, and the *Dutch* Company sent Shipping for their Transportation. *Diego Rais*, which is the next Island to *Maritius*, was made a *French* Settlement, but finding it barren, they left it in 3 Years; all the rest were always uninhabited, as well to the Eastward as the Northward, and but 3 or 4 to the Westward, who ly in the Channel between *Quiloa* and *Madagascar*.

"*Comora* is the Westmost of the inhabited Islands, and affords nothing but a scrimp Maintenance for a Parcel of poor miserable Creatures. *Johanna* is within sight of *Comora*, and is a plentiful Island in Cattle, Goats, Fowls and Fish, with good Lemons and Oranges, so that most Part of the *English* Shipping bound to *Mocha*, *Persia* and *Surat*, usually called there for Refreshments, till the Pirates began to frequent it. There are two memorable Accidents fell out at that Island to the *English East-India* Company's Shipping. One was in the Year 1690 or 91, to

Captain *Burton* in the *Herbert*, a Ship of 800 Tons, mounted 56 Guns. He was attacked by three *French* Ships, each gunn'd and mann'd as well as he. On their Approach, he cut his Cables, and put to Sea; about 2 after Noon they began an hot Engagement, which lasted till 8 in the Night, that the *Herbert* blew up, and all her Men lost, but 6 or 7 that were in the Pinnacle, some whereof I saw afterwards at *Muskat*. The other was lately in anno 1720, when two of our *East-India* Ships were watering there with an *Ostend* Ship in their Company; they agreed to stand by one another in case of Assaults, or engaging with the common Enemy, but when two Pirates drew near, the *Greenwich* and *Ostender* weighed, and stood to Sea, and left the *Cassandra* to shift for herself, who was obliged to engage the smallest Pirate (being a Ship of 24 Guns, *Dutch*-built) in the Bay, and soon after they began, the *Cassandra* went aground on some Rocks, and the Pirate striving to board her, was also taken up by some Rocks, not above 20 yards from the *Cassandra*. The Pirate's Head lay towards the *Cassandra's* Broadside, and they pelted one another furiously, many falling on both Sides; but the Pirates, finding too hot Work on their Decks, were forced to quit them, and run down into the Hold for Shelter. Captain *Mackraw*, who commanded the *Cassandra*, seeing the other Pirate approach near him, and manning all his Boats to reinforce his Comrade, thought it a good time for him, and who else could get ashore, to embrace the Opportunity, and accordingly they got into their Boats, and saved their Lives. The inhabitants shewed much Humanity to the Distressed, and carried them above a Dozen of Miles up in the Country for fear the Pirates, in their mad Fury, should have murdered the poor Men that escaped from their Ship. The Pirates, soon after they had Possession of the *Cassandra*, got her afloat again, she having received little or no Damage; they also got their own Ship off, but she was very much shattered, and disabled in her Masts.

"Captain *Mackraw*, being a Gentleman that was well versed in Conversation with men of any Temper, ventured on board the Pirates. and they were so much taken with his Address, that they made him Present of that Ship which he had so bravely battered, to carry him and his Crew to *India*; in the mean while, the *Greenwich* came to *Bombay* in *September*, who brought the Account of the Loss of the *Cassandra*; and in *November*, Captain *Mackraw* arrived himself with his New Ship, and his Ship's Company all in Rags, but were soon equipp'd by the Benevolence and Generosity of the Governor Mr. *Boone*, who was a Gentleman of as much Honour and good Sense as any that ever sat in that Chair.

"*Mohilla* is but a little distant from *Johanna*, pretty well inhabited, but the people not so well civilized as *Johanna*; and the Kings of these neighbouring Islands have continual War. The *Johanna* Men, by the Assistance of Commodore *Littleton*, landed on *Mohilla*, and made great Slaughter and Devastations; but what his Policy was in breaking the Neutrality that the *English* held among those Islanders I know not. *Mayotta* lies about 35 Leagues from *Johanna*, and is the largest of the inhabited Islands, but being surrounded with dangerous Rocks under Water, it is not much frequented, and so the manners of the Inhabitants not so well known. The Religion of those Islands is *Mahometan*, but there are few Zealots among them; and so I leave them, and return to Cape *Guardafoy*, and travel up the *Red Sea*.

"The Navigation of the *Ethiopian* Seas is very dangerous, and their Maps very deficient; for I saw a *Dutch* Skipper at *Mocha*, who had Orders to sail from *Batavia* towards *Mocha*, in the month of *January*, and to navigate to the North End of *Madagascar*, and from thence to the *Red Sea*; he affirmed to me, that he saw several large Islands, and many Rocks and Sands in those Seas that were not placed in his Maps, for which reason he was obliged to anchor in the Nights, when he could have Anchor Ground; and that the Currents run very strong to the Southward among those Banks and Rocks."

The accompanying Map, engraved by Robt. Mylne, is part of "A General Mapp of the Sea Coasts of AFRICA from the Cape of Good Hope to Cape Guardafoy with the Inhabited Islands in those Seas," placed at the head of the 1st Chapter of Hamilton's "A new ACCOUNT OF THE EAST INDIES, 1744."

*Extracted by S. PASFIELD OLIVER, CAPT. LATE R.A.*



## VARIETIES.

### In a Tropical Forest.

Who knows the joy of untamed forest streams,  
 That laugh in sunless ravines, and disdain  
 The rending cataracts with a smile which gleams  
 Like jewels flashing amid summer rain?  
 No vivid verdure that is born in spray,  
 No glistening fern that courts the floating breeze,  
 No palm that sways in rhythm with the lay,  
 No lofty lordling among ancient trees,  
 No thing that's rooted, bound, and moored to place,  
 Nor even soaring birds, who roam to die,  
 May know the joy of their untrammelled race  
 Who run in careless immortality;  
 I wandering on their trackless banks am bound,  
 My thoughts alone their liberty have found.

W. CLAYTON PICKERSGILL.

*Madagascar.*

*From "The Spectator," Dec. 19, 1891.*

X A Malagasy Marriage Feast in High Life.—As an example of the way in which the upper classes of Malagasy society now live, as well as affording a curious philological puzzle, I think the following *menu* is not unworthy of a place in our "Varieties." It is copied from the printed bill-of fare given to each guest at the feast following the marriage of Ratêlifêra, a grandson of the Prime Minister of Madagascar, to Rafêlasina, a young lady who is also a relative of the same distinguished personage. The wedding ceremony took place on the afternoon of Thursday, Nov. 10th, at the Chapel Royal, in the presence of Her Majesty Queen Ranavâlona III. and her Court, and was followed by a banquet of no fewer than *fifty-five* courses, as will be seen by the following list. After considerable trouble, and the kind help of two or

three friends, I have managed to find out the meaning of most of the strange mixture of Malagasy, French, and English words which the writer of this *menu* has used to describe the dishes, and these are appended as a key to the puzzle; but a few, as will be seen, still remain enigmas. The spelling, with its mistakes and inconsistencies, is exactly reproduced. — J.S. (ED.)

## SAKAFO

*amy ny Fampakaram-badin-d*

## RATELIFERA

*Zanaky ny Prime Minister sy Commander-in-Chief.*

R

- |                                   |                              |
|-----------------------------------|------------------------------|
| 1.—Befitaika (Okape) 2.           | 28.—Pigeon Fricando.         |
| 2.—Lamolety 3.                    | 29.—Volay Crapodine.         |
| 3.—Kotolety (Bania).              | 30.—Salmon (pomme de teré).  |
| 4.—Benier serivel.                | 31.—Radogo moton.            |
| 5.—Rozy bify.                     | 32.—Ratad Pork.              |
| 6.—Akoho mifahy amy ny Sam-paina. | 33.—Sardine Benier.          |
| 7.—Vorombazaha amy ny Salimina.   | 34.—Ensivedéngy.             |
| 8.—Zana-boromahailala sy pitipoa. | 35.—Soter sampion.           |
| 9.—Petite voler zardinera.        | 36.—Patese pigeon.           |
| 10.—Borsety.                      | 37.—Petite pater henankisoa. |
| 11.—Dobe.                         | 38.—Bole de pome de terre.   |
| 12.—Laisoa (farci).               | 39.—Mourir aulete.           |
| 13.—Lelomby.                      | 40.—Poisson aucapé.          |
| 14.—Lelomby.                      | 41.—Farcide Baranziely.      |
| 15.—Makorome.                     | 42.—Farci tomate.            |
| 16.—Grand Dohe.                   | 43.—Le foi sote.             |
| 17.—Vorontsiloza farci.           | 44.—Lasopy varamisely.       |
| 18.—Vorombazaha (Zolive).         | 45.—Anasoka ansy.            |
| 19.—Lozay zipinar.                | 46.—Servel Lasose banche.    |
| 20.—Hazandrano Finizerbe.         | 47.—Omar grantin.            |
| 21.—Grantin.                      | 48.—Dobe de poisson.         |
| 22.—Lasosy blanche.               | 49.—Tripoalamode deka.       |
| 23.—Jolier.                       | 50.—Cotilety de pork.        |
| 24.—Lalange ocomesion.            | 51.—File picolar.            |
| 25.—Rotier (Fen' ondry).          | 52.—Sosisy Tomato.           |
| 26.—Rotier macenezy.              | 53.—Ovimbazaha lapre.        |
| 27.—Frigasé polet.                | 54.—Karé volay.              |
|                                   | 55.—Haza-drano atao Friry.   |

*Explanation.*—1, Beefsteak (with capers?). 2, Omelet. 3, Cutlet (*Bania*?). 4, Brain fritters. 5, Roast beef. 6, Fatted fowl with champagne. 7, Hashed duck. 8, Pigeons with peas. 9, Chicken with vegetables. 10, *Borsety*?. 11, Stewed beef. 12, Cabbage stuffed. 13, Tongue. 14, Tongue. 15, Maccaroons. 16, *Grand Dohe*?. 17, Stuffed turkey. 18, Duck with olives. 19, Spinage salad?. 20, Fish *Finizerbe*?. 21, Grated bread. 22, White sauce. 23, Julienne soup. 24, Tongue with pickles?. 25, Roast leg of mutton. 26, Roast *masenezy*?. 27, Fried chicken. 28, Pigeon. 29, Devilled fowl. 30, Salmon and potatoes. 31, Ragout of mutton. 32, Roast pork. 33, Sardine fritters. 34, *Ensivedéngy*?. 35, Sauté of mushrooms. 36, Pigeon patties. 37, Small pork patties. 38, Potato balls?. 39, Cod with milk. 40, Fish with capers. 41, Stuffed egg-plant (*bringelles*, Fr.). 42, Stuffed tomatoes. 43, Sauté of liver. 44, Vermicelli soup. 45, *Anasoka ansy*?. 46, White brain sauce. 47, Grated lobster. 48, Fish stew. 49, Tripe alamode de Caen. 50, Pork cutlets. 51, Fillets of—?. 52, Tomato sausage. 53, Potatoes *mashed*?. 54, Curried fowl. 55, Fried fish.

✧ **French Exploration of Madagascar.**—"M. Douliot, who is charged by the Minister of Public Instruction in France with a mission of exploration in Madagascar, has made a short journey of about 125 miles from Nosy Miandroka, which lies at the mouth of the Môrondava, to Fort Mânja, and thence to the village of Vondrore on the River Mangoka. The country traversed was formerly almost unknown. The traveller states that watercourses are more numerous in this region than had been supposed; most of the streams, at any rate in the dry season, do not find their way to the sea, their waters being lost in the sand at a short distance from the coast. M. Douliot contemplates another excursion into the interior across new country."—*Proc. Roy. Geog. Soc.*, 1892.

**Note on the Sihanaka "Kompy" or 'Lying-in' bed.**—In Madagascar generally it is the custom for a newly confined woman to be placed in close proximity to the fire-place, and the lying-in bed is by the Sihanaka called *kômpy* (in Imèrina, *kômbô*). It sometimes has curtains of some thin material. The different tribes have doubtless different modifications of arranging the *kômpy*, and here in Antsihanaka it is quite a unique piece of furniture. Some time before the expected arrival, four or five bamboos are put into the ground within a foot and a half of the hearth, on its eastern side. These are intended to serve as posts for the special bed. The framework having been fixed on these bamboos, mats are arranged all round it and above, a little door being left facing the fire-place. When finished, the length of the entire structure is a little over five feet, and its breadth about two, while the height of the bed is about three or three and a half feet from the ground. — J.G.M.

✧ **A Hova Custom with regard to People at the point of Death.**—I do not know that the following common practice of the Hova has anywhere been noticed. If a person is on the point of death, and happens to have on a dirty dress, the relations hurriedly change this for a clean one, believing that the one he dies in will be what he wears in the other world. — R.B. (ED.)

**Royal Geographical Society.**—At the Annual Meeting of this Society, held in the Hall of the University of London, on May 23rd, 1892, among other awards was the following: "The BACK GRANT to the Rev. James Sibree, for his many years' work on the geography and bibliography of Madagascar." This grant is the annual interest of a sum of money left by the late Admiral Sir George Back for the encouragement of geographical research.

## BOTANICAL AND NATURAL HISTORY NOTES.

✧ **Discovery of Remains of *Æpyornis* in Central Madagascar.**—Since my sketch of the extinct birds of Madagascar (pp. 423–425 *ante*) was in print, remains of the great struthious bird *Æpyornis* have been discovered at Antsirabè, in the district of Vakinankaratra in Central Madagascar. Up to this year, as stated in "Madagascar Ornithology," eggs and bones of this ancient gigantic bird had been found only on the southern coasts of the island, but we now see that it also inhabited the interior. These remains are associated with bones of the extinct Hippopotamus, which had previously been found abundantly at Antsirabè in the deposits of lime, and consist of portions of the femur, tibia, and lower vertebræ of the *Æpyornis*; but up to the present time no portion of the cranium has been found either in the interior or on the coast. — J.S. (ED.)

**Epyornis Eggs.**—"A great rarity, in the shape of an *Epyornis* egg, was exhibited at the Zoological Society on Tuesday. This huge egg is as nearly as possible a foot long, and the specimen in question is valued at about £100, so that it rivals the egg of the Great Auk, which fetches such fancy prices. These eggs are occasionally found in Madagascar, but only a few of them have ever turned up. The bird which laid them is only imperfectly known from fragments. It is supposed to be the origin of the fabulous Roc, but was not so large a bird as the size of the egg would naturally suggest. Some of the New Zealand Moas were bigger."—*The Weekly Times and Echo*; May 7th, 1892.

**New Plants.**—In Hooker's *Icones Plantarum* for September of the present year are figured the following new plants: —*Polycardia Baroniana*, Oliv.; *Macphersonia macrophylla*, Oliv.; *Ixora siphonantha*, Oliv.; *Vernonia cephalophora*, Oliv.; *Nicodemia Baroniana*, Oliv.; *Vitex congesta*, Oliv.; *Clerodendron eucalycinum*, Oliv.; and *Clerodendron Baronianum*, Oliv. Of the *Ixora*, Prof. Oliver says: "A noble addition to this large genus. I do not know any species of *Ixora* with flowers so large."—R.B. (ED.)

## LITERARY NOTES.

**New Books on Madagascar.**—By MONS. J. B. ROLLAND: *Huit mois à Madagascar*; Marseille: 1890†; 8vo.—By MONS. C. SIMOND: *Madagascar*; Paris: 1890; pp. 72 8vo.—By REV. R. BARON (Editor): *Ten Years' Review of Mission work in Madagascar* (L.M.S.), 1880-1890; Antananarivo: 1890; pp. 134 demy 8vo, 2 maps.

**Pamphlets and Papers on Madagascar.**—By DR. A. DAVIDSON: "The Infective and Climatic Diseases of Madagascar," pp. 712-721, Chap. iii. Div. II. of Africa, Vol. II., in *Geographical Pathology: An Inquiry into the Geographical Distribution of Infective and Climatic Diseases*; Edinburgh and London: 1892.

By REV. J. SIBREE:—"On the Birds of Madagascar and their Connection with Native Folk-lore, Proverbs and Superstitions;" *The Ibis*, Apr., July, Oct. 1891, Jan. and Apr. 1892, pp. 108.—"The Folk-lore of Mala-

gasy Birds;" *Folk-lore*, Sept. 1891, pp. 336-366.—"Divination among the Malagasy, together with Native Ideas as to Fate and Destiny;" *Idem*, June 1892, pp. 193-226.—"Ambositra: a Country Station in South-Central Madagascar;" *Chron. L. M. S.*, Feb. 1891, pp. 67-75, with illust.—"Congregational Mission Work (in Madagascar) and the Development of Free Church Polity in a Mission Field;" *Proc. of International Congl. Council*, 1891, pp. 340-344.—"Growth of Christian Life and Self-help among the Malagasy;" *Evangelical Magazine*, Mar. 1892, pp. 4.—"The Malagasy Congregational Union;" *Idem*, May 1892, pp. 4.—"Imérina, the Central Province of Madagascar, and the Capital, Antananarivo;" *Proc. Roy. Geo. Soc.*, Nov. 1892, pp. 737-753, with map.—"Curious Words and Customs connected with Chieftainship and Royalty among the Malagasy;" *Quart. Journ. Anthropol. Institute*,

\* See pp. 423-425, *ante*.

† It will be seen that many of these publications were issued before the present year, but as they have not been previously noticed in the ANNUAL, it has been thought well to include them in these "Notes," so as to make our literary record as complete as possible.—EDS.

Feb. 1892, pp. 215-229.—"Decorative Carving on Wood, especially on their Burial Memorials, by the Betsiléo Malagasy;" *Idem*, Feb. 1892, pp. 230-244, 2 plates.

By REV. A. S. HUCKETT: "A Talk about the Betsiléo;" *Young Peop. Missy. Letter*, Apr. 1891, pp. 8, with 4 illust.—By REV. E. O. MACMAHON: "First Visit to the Betsiriry;" *Mission Field*, 1890, pp. 125-133.—"Second Journey to the Betsiriry;" *Ibid*, 1890, pp. 165-171, 207-213.—By G. F. SCOTT ELLIOTT, ESQ., M.A., B.Sc., F.L.S.: "The Flora and Fauna of Madagascar;" *Trans. and Journ. of Proc. of Dumfriesshire and Galloway Nat. Hist. and Antiq. Soc.*, 1890, pp. 236-240 (see *ante*, p. 399).—"Notes on a Botanical Trip in Madagascar;" *Proc. Roy. Geog. Soc.*, Mar. 1891, pp. 158-163 (see *ante*, p. 394).—"Notes on the Fertilization of South African and Madagascar Flowering Plants;" *Annals of Botany*, Vol. V., No. xix., Aug. 1891, pp. 335-405, with 3 plates.—"New and little-known Madagascar Plants collected and enumerated by G. F. S. E.;" *Lin. Soc. Journ. Bot.*, Vol. XXIX., 1891, pp. 67, with 12 plates.

"Visite Pastorale de Monseigneur Cazet dans les Mission de la Province des Betsiléo;" *Les Mission Catholiques*, No. 1131, 6 Fév. 1891, avec 3 illust.—By REV. PERE COLIN, S. J.: "Observatoire royal de Madagascar à Tananarivo;" *Bull. Soc. Comm. Bordeaux*, 1890, pp. 223-228.—"Voyage dans l'isle de Madagascar du Rév. W. D. Cowan;" *Rev. Soc. Géogr. de Tours*, No. vii., 1890, pp. 232-235.—By MONS. GEORGES FOUCART: "La Côte Orientale et l'Imerina;" *Union Géogr. du N. de France (Douai)*, Tome xi., Mai-Juin 1890, pp. 207-228.—By MONS. GABRIEL FERRAND: "Notes sur Madagascar;" *Bull. Soc. de Géogr. de l'Est*, 1890, pp. 231-236.—By MONS. E. LAILLET: "Etude sur l'Etablissement des Ports. Docks et Phares de Tamatave et Majunga;" *Bull. Soc. Comm. Paris*, 1890, xii., p. 629.—By MONS. G. REGNAUD: "Le premier Bateau de Guerre mal-

gache;" *Rev. Géographique*, Août.-Sept. 1890, p. 186.—By MONS. G. ROUTIER: "Le Voyage de M. J. B. Rolland à Madagascar;" *Bull. Soc. Normande de Géogr.* Mai-Juin 1890, pp. 149-167.—By MONS. SALANA: "Les Français à Madagascar;" *Bull. Soc. Géogr. de Lille*, Nov. 1890.—"Catat und Maistres Reisen auf Madagascar 1889-90;" *Globus*, Bd. lix. No. 8, 1891, pp. 123, 124.—"Explorations de Catat et Maistre;" *Bull. Soc. Géogr. Comm. de Havre*, Sept. Oct. 1890, pp. 307-312; "Voyage à Madagascar;" *Idem*, Mai-Juin 1891, cartes.—By MONS. A. GRANDIDIER: "Le Voyage de MM. Catat et Maistre dans l'Est et la Nord de Madagascar;" *Bull. de Géogr. Hist. et Descriptive*, 1890, pp. 115-119.—"Deuxième Rapport sur la Mission de MM. Catat et Maistre à Madagascar;" *Idem*, 1890, p. 453.—"Exploration de Madagascar par le Dr. Catat et M. Maistre;" *Bull. Soc. Géogr.* 1890; pp. 558-564, avec carte.—By HERR A. SUPAU: "Regenfall in der Hauptstadt von Madagascar;" *Peterm. Mitteil.*, 1890, pp. 136, 138.—By VAZAHA: "The Military Situation in Madagascar;" *Fort. Review*, Mar. 1892, pp. 437-439.—By HERR A. VODTZKOW: "Besuch des Kinkom-Gebiets in West-Madagaskar;" *Zeitschr. Geo. f. Erdkunde*, Berlin, 1890, xxvii. No. 1, pp. 65-82, with map.—"Annuaire de Madagascar pour 1892;" Tananarive: 8vo, pp. 52, avec Plan de Tananarive, Plan de Tamatave, et carte Postale et Télégraphique de Madagascar.

**Works in Malagasy:**—The Revised Malagasy Bible. *Ny Soratra Masina, dia ny Testamenta Taloha sy ny Testamenta Vaovao. (Revision Committee's Version.)* London: Br and For. Bible Soc. 1892; pp. 1112, 12mo. This is a small and handy Edition of the Revised Malagasy Bible, of which the first edition in large type was sent out in 1889. Its cheapness (one shilling) and convenient size make it greatly appreciated by the people. It was carried through the press by Rev. J. Sibree.

The following books have been



l from the **L. M. S. Press**:—*Hevi-  
iminy ny Filazantsarany Faona*  
mentary on the Gospel of John);  
ev. J. Peill; 8vo, pp. 390.—*Hevi-  
teny amy ny Epistily ho any  
ebreo* (Commentary on the Epis-  
the Hebrews); by Rev. A. W.  
on; 8vo, pp. 258.—*Abidim-  
piana ho any ny Kristiana* (Ele-  
s of Christian Knowledge—the  
Lord's Prayer and Ten Com-  
ments); by Rev. W. E. Cou-  
12mo, pp. 156.—*Ny Sarinetin'*  
y (Translation of "Christy's Old  
n"); by Rev. J. H. Haile; 12mo,  
8.—*Rozalia: na "Tsy ary  
nena avokoa izay rehetra ma-  
iratra"* (Translation of "Roz-  
r Peeps behind the Scenes");  
ev. J. H. Haile; 18mo, pp. 52.  
—*Krisimasin' Jangely* ("Trans-  
of "Angela's Christmas");  
rs. Pearse and Rafiringa; 18mo,  
7.—*Ny Fandresen' ilay Zaza-  
ny ny Nahavitany izany* (Trans-  
of "The Boy's Victory and how  
id it"); by Mrs. Pearse; 18mo,  
2.—*Tantaran' ilay Mpisotro  
sy ny Zanany* (Translation of  
ory of a Drunkard and his Chil-  
'); by Miss Clark; 18mo, pp.  
—*Resadresaka ny amy ny Fifa-  
Toaka* (Translation of "A Talk  
emperance"); by Miss Clark;  
pp. 12.  
m the **F. F. M. A. Press**:—*Ny*

*Mpamafy* (Simple Expositions of the  
Parables of our Lord); by Mr. H. E.  
Clark; 12mo, pp. 66.

From the **S. P. G. Press**:—*Fotopo-  
totry ny Ekonomy Politikaly* (Ele-  
ments of Political Economy); by Rev.  
F. A. Gregory, M. A.; 12mo, pp. 349.—  
*Fotopototry ny Eoklidy* (Elements of  
Euclid, with Exercises); by Rev. F.  
A. Gregory, M. A.; 12mo, pp. 457.  
—*Gramara Malagasy Frantsay*  
(French Grammar for the Malaga-  
sy); 8vo, pp. 146.—*Fihirana* (Hymn  
Book); 16mo, pp. 224.

From the **N. M. S. Press**: *Hevi-teny  
amy ny Salamo dimy amby roa-polo  
voafantina; Fizarana I.* (Com-  
mentary on 25 selected Psalms); by  
Rev. A. Walen; 8vo, pp. 253.—  
*Hevi-teny aminy Joela sy Fona ary  
Malakia* (Commentary on Joel, Jo-  
nah, and Malachi); by Rev. S. E.  
Jørgensen; 8vo, pp. 49.—*Madagas-  
kara Atsimo:—Ny Fandehanany  
Rev. P. Nilsen-Lund tamy ny Iao-  
na 1887 sy 1890.* (Rev. P. Nilsen-  
Lund's Journeys in Southern Mada-  
gascar in 1887 and 1890); 8vo, pp.  
36.—*Ny amy ny hitondran' ny Ray  
aman-dreny ny Zanany* (Concern-  
ing the Training of Children by their  
Parents); by Rev. L. Stueland; 12mo,  
pp. 8.—*Teny kely ny amy ny Fama-  
dihana* (A few words on 'Fama-  
dihana' [see pp. 406-416, ante]);  
by Pastor Rajaona; 18mo, pp. 22.

## WILLY TABLES OF THE TEMPERATURE AND RAINFALL FOR 1892.

The tables on the following pages are the records of observations made in the L. M. S. College grounds at Faravohitra in Antananarivo, 4,700 ft. above the sea. The *first* column shows the rainfall for the 24 hours previous to 8 a.m. of the morning of the day; the (minimum) shows the starting or lowest point of the thermometer before sunrise, and the *third* the average for six years. The *fourth* column (maximum) shows the highest point reached during the day, and the *fifth* the average for six years.

It will be noticed that only twice (Sept. 5th and 6th) has the thermometer touched 40°F.; the highest was on Nov. 30th, when it reached 85°F.

The rainfall is not recorded for the latter half of the year, because the measure has been changed and a new one to replace it has not yet arrived from England. The rain has been recorded and can be given in a subsequent number.

The rainfall for eleven years, 1881—1891, was as follows:

1881, 42.12 in.;	1882, 41.08 in.;	1883, 57.65 in.;	1884, 68.86 in.;
1885, 52.19 in.;	1886, 47.28 in.;	1887, 65.08 in.;	1888, 53.84 in.;
1889, 49.91 in.;	1890, 52.71 in.;	1891, 40.96 in.	

1892 (half-year), 30.39 in.;

Aver. 11 yrs. 51.91 in.

J. RICHARDSON.

506 DAILY TABLES OF TEMPERATURE AND RAINFALL.

JANUARY.						FEBRUARY.						MARCH.					
Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.
1		60	60.83	76	76.83	1	.02	61	62.83	76	77.83	1	.03	60	60.16	74	75.16
2		56	60.16	74	74.3	2	.49	59	62	75	77.3	2	.08	60	61	74	74.6
3		56	59.16	74	73.16	3	.01	60	62.5	74	76.3	3	.07	58	60.5	73	75.16
4	.03	58	59.83	74	74.16	4	.21	61	62	71	75	4		57	60.5	74	74.83
5		59	60.16	76	74.16	5	.11	60	61.3	75	75.83	5		57	61	74	75.16
6		57	58.25	76	74.83	6	1.41	61	60.5	72	75.83	6		57	59.08	73	75
7	.15	59	58.83	75	75.83	7	.41	60	61.16	76	77.16	7	.02	58	58.6	70	73.83
8		61	61	82	75.6	8	.98	61	61.3	76	77.3	8		58	59.6	76	75.83
9	.02	61	60.6	82	76.5	9	.70	61	61	75	76.16	9		58	59.6	77	75.16
10	.70	60	60.6	79	75.6	10	.97	60	61.3	71	75.83	10	.09	57	60	71	73.5
11	.62	60	61	79	74.16	11	.06	57	61.6	72	76.5	11		56	59.6	72	74.6
12	.24	58	60	76	73.6	12	.78	59	62	72	76.83	12		57	59.5	72	73.6
13		56	58.16	75	74.6	13	.16	60	61.6	76	77.16	13		58	59.6	72	71
14		56	59.5	74	74.3	14	.23	61	62.6	72	76.3	14		58	60.16	72	70.6
15		60	60.5	82	75.83	15	.57	59	61	74	75.3	15		58	59.83	72	74.6
16	.02	61	60.83	79	74.83	16	.04	60	60	74	75.3	16		57	58.16	72	71
17	.02	60	60	79	75.16	17	.19	61	60.5	78	76.3	17		58	59	71	71.3
18	.42	62	61.16	78	74.6	18	.02	61	60.83	76	76.3	18		57	58.5	70	72
19	3.28	59	61.5	76	75	19	.17	60	60.5	77	77.16	19		54	57.16	71	72.6
20	.42	57	61	72	74.6	20	.11	61	61	78	76.5	20		57	59.6	73	74.6
21		55	60	70	73.83	21	.15	62	60.6	79	76.5	21	.14	58	59.83	75	75
22		58	61	72	75	22	.03	62	61.16	74	74.6	22	.44	58	60	72	73.3
23		59	62.5	70	75	23	.16	58	60.6	75	74.83	23	.11	58	59.3	71	71.3
24		59	62.5	78	76.6	24	.62	60	61.83	73	74.5	24		57	57.16	68	69.83
25	2.18	59	61.16	76	77	25		58	60	72	73.83	25	.02	55	57.16	68	70.3
26	.12	60	62.5	74	76.16	26	.06	55	60.16	70	74.5	26		54	57.83	67	71.3
27	.31	58	61.83	77	76.5	27		56	60.5	71	74.6	27		52	57.6	69	72
28	.82	58	61.83	78	75.3	28	.02	60	60.83	72	74.16	28		55	58.25	72	72.5
29	2.15	59	61.83	80	74.83	29	.21	61		72		29	.09	59	59.6	73	72
30	2.70	61	62.3	76	76							30		59	58.83	76	72.5
31	2.11	59	62.3	78	77.3							31		60	58	75	70.6

Tot.: 16.31 in. Av. 12 yrs. 11.525 in. 10.907 in. Av. 12 yrs. 9.07 in. 1.09 in. Av. 12 yrs. 6.66 in.

APRIL.						MAY.						JUNE.					
Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.
1		59	58	75	71.3	1		49	53.5	62	66.83	1	.01	48	50	58	62.83
2	.17	58	58.83	76	72.83	2	.03	51	55.16	62	66	2		46	49	58	62.3
3		60	58.6	73	72.6	3		51	54	63	65.16	3		44	47.3	56	61.5
4		57	57.5	71	71.83	4		49	52.3	63	65.3	4		49	49	61	62.3
5	.10	58	58	70	70.3	5		51	53.3	63	66.6	5	.04	52	50	59	62.83
6		57	58.6	70	71.3	6		50	52.6	63	66.3	6	.03	48	48.83	60	62.3
7		57	58.5	72	71.3	7	.06	53	53.6	62	66.3	7	.03	54	48.6	62	61.83
8	.34	58	58.5	70	69.16	8		50	52.3	62	66.6	8	.04	48	46.3	61	61
9		55	57	69	69.83	9		50	54	64	67.6	9		50	46.83	60	61.6
10		56	57.3	70	69.6	10		50	53.5	67	68.3	10		48	48.16	59	62
11	.25	56	57.5	67	68.83	11		48	53.3	65	66.6	11		45	48.6	62	62
12	.22	53	57	68	68.5	12		54	52	68	66.16	12	.04	52	46.5	60	59.83
13		56	57	70	69	13		55	53.6	68	65.83	13		46	47.83	58	59.83
14	.43	56	57	70	69.5	14		51	53.3	66	65.83	14		45	46.6	58	59
15		58	57.6	70	70.3	15		52	52.6	64	65.6	15		45	46.3	60	58.5
16	.21	58	57.6	69	69.6	16		51	52.6	63	64.83	16		47	44.5	59	60.3
17		59	57.5	70	70	17		52	52.3	64	65.16	17		46	46.16	60	61.5
18		59	57	70	69	18		54	52.6	63	65	18		47	45	60	60.6
19		57	56.83	70	68.3	19		50	51.83	64	65.5	19		46	44.83	61	60.16
20	.06	57	56.3	67	67.3	20		49	52	61	65	20		44	45.16	55	59.16
21		53	55.5	66	68.83	21		47	51	61	66.16	21		41	46	52	59.6
22		54	55.6	67	68	22		44	50.3	61	64	22		45	46.3	52	60.5
23		55	56.16	69	68.83	23		46	50.16	62	63.6	23		41	46.6	57	61
24		57	56.83	70	68.83	24		48	49.6	61	63.83	24		49	49.5	58	61.83
25		57	55.16	69	68.5	25		45	48.3	62	63.83	25		46	48.5	59	61.3
26	.01	55	54.3	70	68.6	26		52	49.6	64	64.3	26		48	48.5	59	60.3
27		53	55	69	69.16	27		51	50	64	64.83	27		47	48.16	60	60.16
28		53	54.3	69	68.16	28		49	49.3	63	62.83	28		46	48	54	57.75
29		52	54	64	66.6	29	.01	51	50.3	58	62.83	29		48	48	57	59.16
30		48	52.3	64	66.16	30		46	49.6	58	62.3	30		45	46	59	59.5
						31		46	49	57	62.6						

Tot.: 1.79 in. Av. 12 yrs. 1.89 in. .11 in. Av. 12 yrs. .582 in. .19 in. Av. 12 yrs. .3 in.

JULY.						AUGUST.						SEPTEMBER.					
Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date
.03	46	48	61	60.16	1	.02	48	45.3	62	60.3	1	47	47.6	59	62.6		
	48	49.16	59	60	2		46	45.3	61	59.83	2	46	48.6	62	64.83		
	44	46.83	59	59.6	3		45	45.16	64	61	3	47	48.6	61	66.16		
	47	48	61	61.16	4		47	45.83	62	61.16	4	45	47.16	65	62.6		
	46	48.83	61	62.3	5		46	46.3	63	61.16	5	40	47.5	63	63.83		
	43	48	61	60.16	6		46	46.5	63	61.16	6	40	48.5	62	63.5		
	44	47	58	59.6	7	.03	47	47.5	64	60.3	7	41	45.83	62	64.5		
	45	46.5	53	58.83	8		49	46.3	62	60	8	42	47.5	61	64.3		
	41	45.3	55	59.6	9		46	46	60	59.3	9	47	49.3	63	66.16		
	47	47.6	60	60	10		48	46.16	59	59	10	47	48.6	63	64.83		
	47	47.3	64	61.3	11		48	45.5	63	59.6	11	45	50.16	65	66.16		
	45	47.3	62	61.16	12		45	44.6	62	59	12	47	50.83	66	66		
	48	48	58	60.3	13		49	48.16	64	60.83	13	46	49.83	66	65.3		
	47	46.6	58	61	14		51	47.3	65	61.3	14	51	49	63	65		
	46	46.83	57	61.16	15		51	49	66	62.6	15	48	49.13	63	66.3		
	48	47.6	58	60.3	16		50	46.6	68	63.3	16	51	50	61	65.16		
	47	46.83	58	61.83	17		52	49.16	63	62.6	17	51	48.3	65	64.6		
	43	48	57	61.16	18		50	48.83	62	63.16	18	52	47.6	64	64.16		
	45	47.6	60	61	19		45	45.5	64	62.6	19	49	48	64	66.3		
	40	46.5	58	60.5	20		47	46	65	63.83	20	43	46.6	62	65.16		
	44	46.5	60	61	21		47	48.3	63	61.83	21	46	47.83	63	65.6		
	47	47.83	59	58.83	22		44	48	70	62.5	22	44	49.5	67	67.5		
	43	47.16	55	60.3	23		46	46.83	66	60.83	23	?	50	63	66.83		
	47	47.6	57	59.83	24		46	47.5	64	61.5	24	44	50.6	63	68.6		
	45	46.3	59	59.5	25		45	46.83	66	63.3	25	46	50.5	63	68.6		
	44	45.6	58	59.83	26		47	48.16	63	63.6	26	44	49.83	63	69.16		
	41	44.6	55	59.5	27		47	49	64	63.6	27	47	52.6	62	70.3		
	44	46	58	59.6	28		51	50.83	66	66	28	46	52.3	66	70.6		
	46	46.16	60	59.83	29		50	49.6	64	65.5	29	47	53.16	65	70.6		
	44	46.16	62	60.83	30		50	49.6	63	64.16	30	50	54.16	66	70.6		
	48	46	63	61.16	31		47	48.6	60	63.5							

. . .03 in. Av. 12 yrs 165 in.

OCTOBER.						NOVEMBER.						DECEMBER.					
Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date	Rain	Min.	Aver. 6 yrs.	Max.	Aver. 6 yrs.	Date
47	53.5	68	70.83	1	57	56.16	77	74.6	1	60	57.83	81	76				
47	53.16	68	72.16	2	56	55.6	64	72.3	2	57	58.5	80	75.6				
47	52.16	73	70.16	3	51	55.3	69	75.3	3	60	57.6	79	76.5				
54	52.6	74	69	4	53	56.6	70	75.5	4	59	57.83	78	76.6				
54	52.3	72	70.3	5	51	55.5	73	76.16	5	53	57.16	73	76.3				
55	52.83	68	67.6	6	54	55.5	76	76.16	6	57	57.5	75	76.5				
56	52.3	74	69	7	55	55.3	72	74.83	7	55	57.83	71	77.3				
54	52.83	73	70.83	8	50	56.16	70	74.5	8	54	57.16	73	75				
54	53.16	72	72.3	9	50	56.6	70	74.5	9	55	57.6	75	77				
51	52.16	72	68.5	10	49	54.6	70	72.83	10	53	58	74	77.5				
51	53.83	74	70.6	11	50	55.16	73	72.6	11	59	58.83	75	78.6				
51	52.5	71	69.3	12	53	55.16	74	72.83	12	55	59.3	77	76.16				
52	53.6	68	69.5	13	50	53.3	71	71.83	13	55	56.5	76	76.5				
49	52.5	70	71.83	14	48	53.3	74	74.6	14	56	56.5	75	76				
50	55.16	68	74.3	15	53	55.5	74	74.16	15	56	58.5	76	77.3				
48	54.5	69	73.6	16	56	56.6	72	77.3	16	59	58.5	76	77.3				
49	54.83	68	69.3	17	50	56.6	73	75	17	58	59.3	71	74.5				
48	52.5	75	68.83	18	52	57.83	74	76.5	18	61	59.83	77	76.6				
52	54.3	68	68	19	54	56.16	83	78.16	19	60	59	79	75.5				
48	52.5	67	71.83	20	57	57	76	76.3	20	60	59.16	79	75.3				
47	53.5	68	72.16	21	55	56.16	78	75.6	21	59	58.5	79	77.16				
48	52.5	67	70.3	22	56	57.5	82	77.6	22	56	57.3	78	75.5				
46	54.83	68	71	23	58	57.5	76	75.83	23	58	57.5	75	75.3				
46	52.5	73	72.5	24	55	56.83	80	75.83	24	57	58.5	76	76				
53	53.6	79	73.83	25	57	57	76	73.83	25	50	58.5	77	76				
55	56	78	75.83	26	57	74	77	75.3	26	56	58.83	73	77.3				
56	56.83	79	76.3	27	57	57.6	80	76.6	27	55	59.6	?	78.6				
55	55.83	81	76.16	28	58	57.6	77	74.6	28	?	60.4	?	77.8				
58	56	79	78.16	29	58	57.3	79	76.83	29	55	58.16	74	75.6				
60	55.5	76	73.5	30	59	58	85	78.16	30	56	58.5	79	77.3				
56	54.83	80	74.5						31	58	59.16	74	78				

# METEOROLOGICAL NOTES TAKEN AT FARAFANGANA,

IN LATITUDE 22° 49' S., AND LONGITUDE 47° 58' E.

THE instruments used in these observations are by Cassella, and are placed in a Stevensen screen, the bulbs of the thermometers being fixed four feet above the grass, and the rain-gauge a foot high. The barometer is 25 feet above high water, and the observations are entered as taken, uncorrected to sea-level.

It will be seen from the following table that the total amount of rainfall during the 12 months, from October 1891 to September 1892, has been 100·65 inches; the greatest amount in any twenty-four hours being over 7 inches, on March 1st. The highest temperature in the shade was 100°, on Jan. 26th. The highest in the sun, registered by the black bulb in vacuo, was 161°, on Jan. 14th. The lowest temperature was noted on June 18-19, when the mercury fell to 52° during that night.

The greatest barometric disturbance took place between Feb. 28th and March 1st, when a cyclone passed over the south-eastern part of Madagascar, doing considerable damage, especially in the more southerly portions of the island. The wind commenced to blow from the south-east, veering to the east, then north-east, from which quarter several extremely strong gusts came; then, passing to the west, the hurricane spent itself in the south-west. The following are the readings of the barometer taken at the hours named during the course of the cyclone:—

On Feb. 28th, at				wind.	On March 1st, at				wind.
9 a.m.	29, 84			S.E.	1 a.m.	28, 96			N.W.
" 3 p.m.	29, 88			S.E.	" 2 "	28, 90			N.W.
" 9 a.m.	29, 80			S.E.	" 3 "	28, 80			W.
" 3 p.m.	29, 47			E.S.E.	" 4 "	28, 82			W.
" 7 "	29, 40			E.	" 7 "	29, 20			W.
" 8 "	29, 30			E.	" 9 "	29, 32			S.W.
" 10 "	29, 16			N.E.	" 10 "	29, 40			S.W.
" 11 "	29, 15			N.E.	" 12 mid-day	29, 50			S.
" 12 midnight	29, 04			N.	" 2 p.m.	29, 56			S.
					" 3 "	29, 60			N.

After which the wind and barometer returned to their normal condition.

GEORGE A. SHAW.

[We regret that the very full and careful tables prepared by Mr. Shaw and kindly sent to us by him, showing daily observations of barometer, thermometer, wind, and rainfall, both at 9 a.m. and 3 p.m., came after arrangements had been made for filling up almost all our available space, and so we are unable to print them in full. We give, however, the means of these observations for each month.—EDS.]

Month	At 9 a.m.					Mon- thly Rain- fall in inches	At 3 p.m.								
	Bar.	Therm.		Wd. forc. o'12	Clo- ud o'10		Bar.	Therm.		Wd. forc o'10	Clo- ud o'10	Thermometer			
		Dry	Wet					Dry	Wet			Max. shd.	Min. shd.	Max. sun	
October, 1891	30°39	78	72	°02	°05	6·56	30°23	81	74	°03	°05	84	64	137	
November, "	30°31	85	76	°02	°04	2·76	30°25	86	78	°03	°03	90	69	148	
December, "	30°28	84	75	°02	°05	7·08	30°22	86	76	°03	°04	91	70	143	
January, 1892	30°21	87	79	°02	°05	10·50	30°15	90	82	°03	°05	94	74	149	
February, "	30°04	81	73	°02	°06	17°03	30°00	82	78	°03	°05	90	72	139	
March, "	30°22	82	77	°02	°06	14°03	30°21	84	77	°02	°05	90	71	141	
April, "	30°27	79	74	°02	°05	12°32	30°20	84	77	°02	°04	89	69	132	
May, "	30°41	70	67	°02	°05	11°74	30°35	78	70	°02	°05	80	63	130	
June, "	30°45	74	68	°02	°04	4°21	30°40	80	73	°03	°04	83	56	117	
July, "	30°50	72	68	°02	°04	6°41	30°48	79	72	°03	°04	82	59	112	
August, "	30°42	73	68	°02	°04	5°00	30°38	81	75	°03	°04	83	59	129	
September, "	30°45	76	69	°02	°03	3°02	30°40	84	77	°03	°03	87	60	137	
Annual mean	30°33	78	72	°02	°04	Total 100°65	30°27	83	76	°027	°042	87	65	136	

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s these four numbers form a fourth volume, an Index to the four is here given. In to economize space, the following abbreviations are usually made:—M. for 'Madagas-Mal. for 'Malagasy'; Bets. for 'Bétsiléo'; Betsim. for 'Bétsimisàraka'; Sih. for 'Sihà-

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